



SATURDAY, OCTOBER 9, 1875.

The Selden Direct-Acting Pump.

The accompanying engraving represents a pump manufactured by Mr. A. Carr, No. 44 Cortlandt street, New York, intended for water works of small towns or for supplying large railroad stations or other similar locations.

A pump similar to the one represented is now working at New Brunswick, N. J. Its principal dimensions are as follows: steam cylinder, 36 inches diameter, 72-inch stroke. There is one plunger 22 in. in diameter working in two cylinders, as shown in the accompanying illustration.

The pump forces water to a vertical height of 128 feet 6 inches, through 7,779 feet of 16-inch diameter column pipe, the pressure in the column pipe being about 56 to 60 pounds and the steam pressure about the same. The air chamber is a 16-inch column pipe 25 feet long, instead of that shown in the cut. The engine makes from twelve to twenty strokes a minute; at 14½ strokes it is calculated to deliver 100,000 gallons an hour, and so perfect is its working that it delivers within 1½ per cent. of its theoretic capacity. The engine exhausts into a very simple form of condenser (the Craig & Brevoort), in which a vacuum of 20 to 25 inches can be counted on. The condenser pump—a small-sized Selden—10 in. in diameter, 16 in. stroke, supplies sufficient water when making the same number of strokes as the large engine. Steam is sup-

plied to each engine on the road; and a strict observance of these rules insures safety in operating the road, if the same is kept in good condition.

We have given considerable attention to our maintenance of way, and I enclose you a circular which it was thought advisable to issue, in order that each of the track-men might be posted, and with it I enclose plates showing the rails and splices, etc., with a circular giving specifications for cross-ties and manner of putting in our crossings, all of which will give you an idea of what is considered standard track."

Our effort is to educate young engineers in the maintenance of road by placing them alongside of old supervisors who have had long experience, and in that way our assistant engineers are passed through each branch in the Maintenance of Way Department.

We have an annual inspection of road bed, which is made by the officers, supervisors, assistant supervisors and track foremen. They mark up the condition of every part of the road, and from these marks is deduced an average condition of track, which is published for the information of all track employees.

I enclose a set of the sheets showing the result of last year's inspection.

The inspection for this year will probably take place about the latter part of October or the first of November, and in preparing for it there is always quite a rivalry between each division and each supervisor's division. Gondola cars are prepared with seats so as to accommodate 30 or 40 men each, and by pushing them ahead of the engine, which is done at a speed of not over 12 miles an hour, all have an excellent opportunity of observing the track.

Premiums are given to the supervisor having the best supervisor's division on the whole road, to the supervisor having

that the higher class of employees are taken from men who have not served a time in other subordinate positions—our conductors being promoted from flagmen and baggagemen who have originally been brakemen.

The rolling stock is also brought to a uniform build.

At the Altoona car shops, which are the main shops on the road, timber is shaped and dressed for each part of the car and shipped to all parts of the road. This timber is worked out by machinery in the planing mills to templates, rendering the building of a car a very small matter, as it only becomes necessary to put these parts together. This is rapidly done, giving the Altoona shops a capacity of about 10 to 15 freight cars per day and 8 to 10 passenger cars per month.

The recent work of building three postal cars in 13 working days was accomplished without much inconvenience, and to such perfection that they were placed upon the road and run over the Middle Division from Altoona to Harrisburg, on day express schedule, without a stop, with perfectly cool journals.

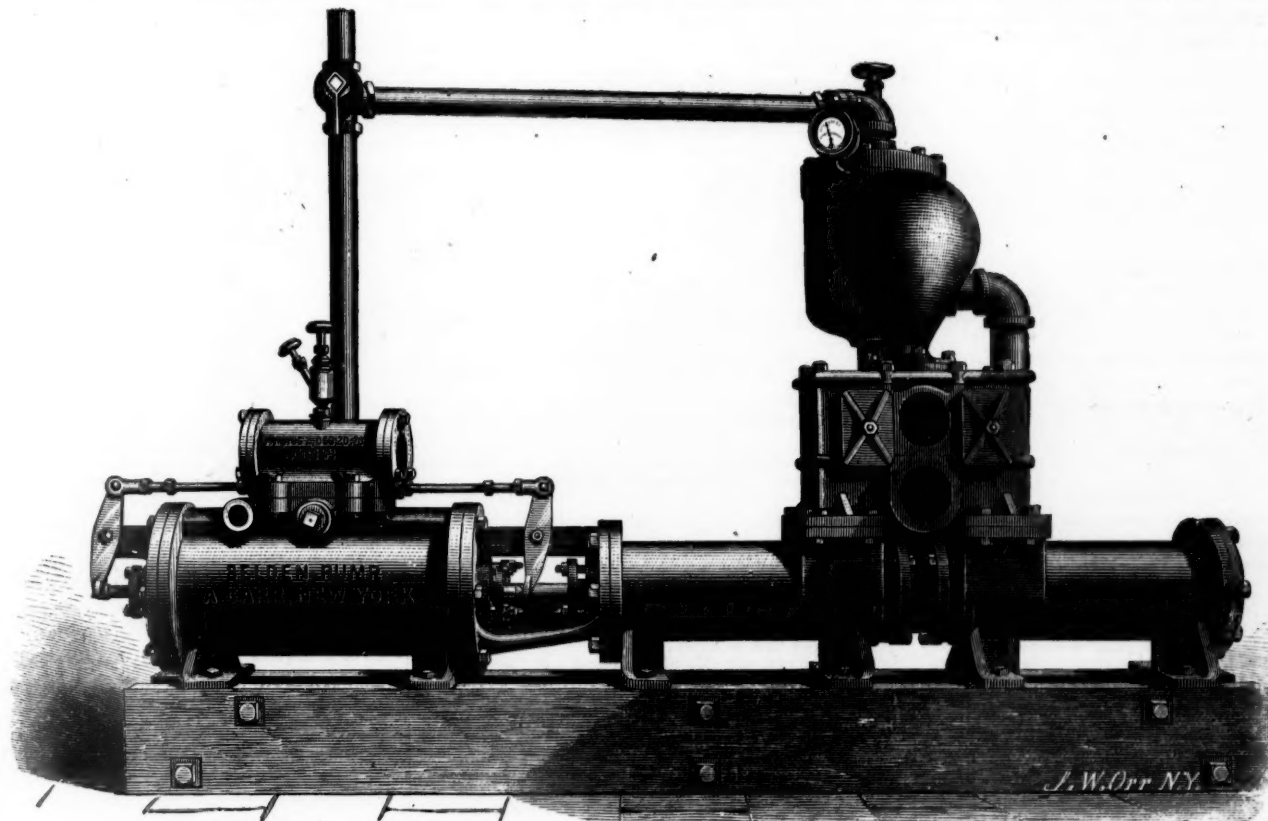
It is the effort constantly to infuse energy and enthusiasm in all the work of the company, and the employees of the road are kept up to this by premiums and inspections, bringing about a rivalry between divisions which results in both economy and safety.

I trust you will excuse the hasty summary I have given; but it may aid you, perhaps, in forming some idea in regard to the operating of the road.

G. CLINTON GARDNER.

General Superintendent.

[The reports of results of track inspection for 1874 are given in large printed sheets, fourteen in number, twelve being covered with the reports of 22 supervisors' divisions. In these there is a column for each sub-division.]



THE SELDEN DIRECT-ACTING

plied by two horizontal tubular boilers and a Kelley's patent sectional boiler.

This pump complete, erected in place, and including two tubular boilers (the foundation for pump and boilers being furnished), costs but \$15,000. And should the work of the engine make it an object to secure greater economy in the consumption of fuel than can be accomplished in the single condensing engine, this may be compounded by adding a smaller steam cylinder, from which the steam will exhaust into the present cylinder. The cost of this addition and alteration has been estimated by the builder at \$2,500, and the saving in fuel to be effected thereby at 30 to 35 per cent.

For the above data and description we are indebted to *The Engineering and Mining Journal*.

Contributions.**The Working Regulations of the Pennsylvania Railroad.**

[The following communication, accompanying the Book of Rules and a number of circulars of the road, was sent to this office originally in response to a request sent to the Pennsylvania Railroad Company for information for an eminent European railroad engineer. At our request, Mr. Gardner permits us to print it.—EDITOR RAILROAD GAZETTE.]

ALTOONA, Pa., Sept. 22, 1875.

TO THE EDITOR OF THE RAILROAD GAZETTE:

Your favor of August 19 to the General Manager, which was referred to this office, has been held for want of time to reply, and I regret that even now I am unable to give it more attention.

I enclose you a copy of our Book of Rules, which is distrib-

uted to each employee on the road; and a strict observance of these rules insures safety in operating the road, if the same is kept in good condition.

In the Motive Power Department we take young men who are thoroughly grounded, and instruct them for three or four years in the shops, passing them through the Mechanical Engineer's office, giving them practical knowledge and experience in designing.

In this way there is a gradual promotion going on through each branch, and the company obtains the benefit of not only the theoretical but also of the practical knowledge of its employees.

For your information, I enclose a circular giving our standard engines, which from long experience have been improved from time to time and brought to their present state of perfection.

In adopting a standard, uniformity of machinery is attained, greatly reducing the amount of stock on hand without delaying repairs in cases of breakages, but enabling them to be made at the shortest possible notice, since many of the principal parts are common to all classes.

In running our engines we have adopted a system of premiums, making it an object for each engineman and fireman to work their engine to its full capacity and as economically as possible.

The amount of fuel per car per mile is changed from time to time to suit circumstances, being made up monthly from the monthly averages.

The enginemen are promoted from firemen who have entered the service originally as brakemen, and it is seldom

*These have been published heretofore in the *Railroad Gazette*.

head by its name and that of the man in charge. There are lines for "Line and Surface," "Joints," "Ballast," "Spacing Ties," "Switches," "Sidings," "Ditches," "Road Crossings," "Station Grounds," and "Policing." Figures opposite these designations give the rank of the sub-divisions in their several qualities. Thus one is marked 7-4 for line and surface, 5-7 for spacing ties, 5-8 for station grounds, and 6-1 for general condition—the average of all the other marks. The mark for perfection is 10. At the foot of the column of marks there are remarks on the sub-division, as, "Road-bed on this sub-division good. Extra attention is necessary on account of a mile of new siding and two bridges which require watching during high water to keep drift from doing damage." A single sheet gives the results of the inspection by supervisors' divisions, having a column for each of the qualities marked and a line for each division with the supervisor's name. The averages for all qualities on the Main Line vary from 7-50 for John G. Craig's supervisor's division of the Philadelphia Division to 5-59 on the fourth supervisor's division of the Middle Division, the whole Main Line averaging 6-09. A brief account of last year's inspection, written by Mr. Wm. H. Brown, Engineer of Maintenance of Way, was published on page 476 of the last volume of the *Railroad Gazette*.

We publish in full the following circular:

CLASSIFICATIONS OF STANDARD ENGINES.

CLASS A. Standard Passenger Engine—17 x 24-in. cylinders, 66-in. drivers.

CLASS B. Mountain Passenger Helper—a modification of Class A, being in all respects like it, with the exception of the

cylinders, which are 18 x 24 in., the drivers, which are 60 inches in diameter, and the boiler, which is larger.

CLASS C. Used for local and fast freight, and for passenger engine. Another modification of Class A—differing only in the diameter of the drivers, which are sixty inches in diameter, and the boiler, which is larger.

CLASS D. "Anthracite." Same as Class C, with exception of boiler and fire-box, which are larger.

CLASS E. Standard Ten-Wheel Freight Engine—18 x 22-in. cylinders, and 54-inch drivers.

CLASS F. Mountain Ten-Wheel Freight Engine—a modification of Class D, differing only in the drivers, which are 48 inches in diameter, and the boiler, which is larger.

CLASS G. Standard Six-Wheel Shifting Engine—15 x 18-in. cylinders, with 44-inch drivers.

CLASS H. Standard Light Passenger or Ballast Engine—15 x 22-in. cylinders, with 55-inch drivers.

CLASS I. Standard Six-Wheel Shifting Engine with Tender—15 x 22-in. cylinders, with 44-inch drivers.

CLASS CONSOLIDATION—Ten-Wheel Freight Engines—20 x 24-in. cylinders, with eight driving wheels, 49 inches in diameter, built for anthracite coal, but now using soft coal.

NOTE.—Many of the principal castings, such as driving-boxes, eccentrics, eccentric straps, etc., are common to all the above classes.

THEO. N. ELY, Superintendent Motive Power.

ALTOONA, Pa., January 1, 1875.

Circulars give a list of the tools and fixtures which each engineman must know personally to be on his engine, and for whose good condition he is held responsible. Those for each passenger, freight and work engine on the Amboy Division are: 2 jack-screws and levers, 2 two-ended packing wrenches, 1 eccentric set-screw wrench, 1 two-ended cylinder-head wrench, 1 two-ended spanner wrench, 1 large two-ended 8 wrench, 2 monkey wrenches (12 and 15 inches), 1 hard hammer, 1 soft hammer, 1 two-gallon oil can, 2 one-gallon oil cans, 1 quart oil can, 1 tallow bucket, 1 tallow pot, 1 cab lamp, 1 tank bucket, 1 log chain, 1 pinch bar, 1 head lamp complete, 1 red lamp, 2 white lamps, 2 green lamps, 2 combination lamps, 1 tin torch, 1 red flag, 4 green flags, 2 white flags, 1 axe, 1 shovel, 1 poker, 1 hook, 1 scraper, 1 coal pick, 3 tin boxes, 1 packing hook, 1 saw, 1 broom, 1 spare brass, 1 sponging iron, 2 wooden cross-head blocks, 1 scrub brush, 6 explosive caps, 1 sponge, 1 book for fuel, 1 book for stores. In addition, passenger engines must carry 1 tank rope, 1 gallon can, 1 section of hose with couplings for air brakes; and freight and work engines, 1 push pole and 1 tank rope.

There are some fifty circulars announcing premiums offered to enginemen and firemen for economy in the use of coal. These are issued for each division for each month, the standard varying somewhat from time to time. These premiums are of a kind which every engine may win, not being for the one showing the greatest economy in fuel, but for all that consume less than a given number of pounds per car-mile.

The following is a copy of the circular for the Philadelphia Division, showing the premiums offered for the month of September:

PENNSYLVANIA RAILROAD COMPANY—PENNSYLVANIA RAILROAD DIVISION.

Philadelphia Division.

NOTICE TO ENGINEMEN AND FIREMEN.

The following premiums will be paid for the month of September, 1875, to all enginemen and firemen whose fuel account per car per mile is reduced to the limit fixed below:

Engine Run.	Mileage per round trip.	Limit lbs. coal per car per mile.	Premiums per round trip.	Engineman.	Fireman.
Niagara and Day Express.....	212	5.0	33	22	22
Way Passenger and Elmira Express.....	215	6.2	33	22	22
Mail and Harrisburg Express.....	212	5.0	33	22	22
Pacific Express.....	212	4.0	33	22	22
Pittsburgh and Philadelphia Express.....	212	5.0	33	22	22
Cincinnati Express and Fast Line.....	212	4.7	33	22	22
Atlantic Express and Fast Line.....	212	3.4	33	22	22
Harrisburg Accommodation.....	218	5.6	27	17	17
Lancaster Accommodation.....	162	9.0	20	13	13
Parkesburg Accommodation (Anthracite).....	128	15.5	15	10	10
Paoli Accommodation (Anthracite).....	128	16.8	15	10	10
Paoli Accommodation (Bituminous).....	128	14.9	15	10	10
Lancaster and Harrisburg Accommodation.....	81	8.0	09	06	06
Downingtown Accommodation.....	128	12.0	15	10	10
Freight, Philadelphia and Harrisburg.....	218	2.6	40	27	27
Freight, Philadelphia and Columbia.....	162	3.5	33	22	22
Freight, Philadelphia and Columbia, Consolidation Engines.....	162	3.1	33	22	22
Freight, Columbia and Harrisburg.....	56	2.8	18	12	12
Freight, Columbia and Harrisburg, Consolidation Engines.....	56	2.2	18	12	12
Local Freight, Philadelphia and Columbia.....	162	4.3	25	18	18
Local Freight, Columbia and Harrisburg.....	56	4.5	15	10	10

By order of the General Superintendent.

THEO. N. ELY, Supt. Motive Power.

WM. F. LOCKARD, Supt. Philadelphia Division.

OFFICE SUPT. MOTIVE POWER.

ALTOONA, Aug. 24, 1875.

The amounts here offered are sufficient to make a substantial addition to the wages of the men who run the engines. Of course the limit of coal per car per mile may be put so high that there would be very little chance of getting below it with ever so much pains, in which case the men would probably not try to get the premium; or it might be set so low that the premium could be got almost

without effort: but experience must soon teach the officers what limit is most effective, and it can be changed to suit circumstances. An examination of the circulars for the Philadelphia Division shows that in February the premiums for the Atlantic express and fast line were 42 cents to the engineman and 28 cents to the fireman, and the limit of coal per car per mile 3.8 lbs.: In March the limit was 4 lbs., and the premiums 40 and 27 cents; in April the limit was 3.9 lbs., the premiums as in March; in May the limit 3.7 lbs., the premiums unchanged; in June the limit 3.5 lbs., the premiums 33 and 22 cents, the latter remaining unchanged since; in July the limit was 3.3 lbs., in August 3.3, in September 3.4.—EDITOR RAILROAD GAZETTE.]

Haslett's Drawing-Scale Guard.

Every draughtsman knows the annoyance in using an ordinary triangular scale, owing to the difficulty of distinguishing at a glance the particular scale which is used. In order to find the one which is wanted the scale is turned over and over, often only to find that it must be turned "end for end" in order to use the scale wanted. The little instrument illustrated by the engraving herewith is intended to obviate the difficulty referred to, and it does it so simply and effectually that we think it will commend itself to every experienced draughtsman. It consists of an elastic metallic "clip," which is sprung on so as to clasp the scale as shown in the engraving. It can be removed in an instant, and placed in a different position if desired. On one side it extends down so as to cover over the marks and figures on the edge of the scale not in use. The other side leaves the scale to be used free to the sight, so that a draughtsman can distinguish it at a glance. The cylindrical portion of the guard furnishes a very convenient attachment for handling the scale, and it indicates at once the position it should occupy when in use. It thus saves a great deal of time and annoyance, and will prevent many errors due to the use of the wrong scale.

It is the invention of Mr. Sullivan Haslett, of No. 115 Clinton street, Brooklyn, and is manufactured by Messrs. Keuffel & Esser, No. 116 Fulton street, New York.

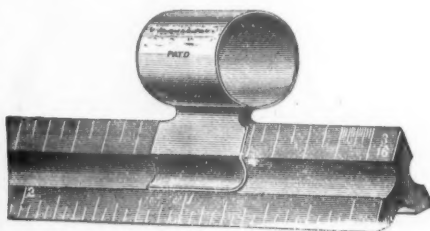


Fig. 1.

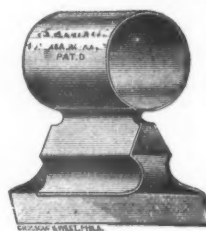


Fig. 2.

HASLETT'S DRAWING-SCALE GUARD.

Semi-Annual Convention of the General Passenger and Ticket Agents' Association.

The following is the official report published in the *Official Railway Guide*:

This Association met at Saratoga on Friday, Sept. 17, President D. M. Boyd, Jr., in the chair. After the calling the roll the Convention proceeded to elect a member of the Executive Committee. Messrs. J. Daily and Chas. F. McFadden were chosen tellers; at the second ballot, C. K. Lord, General Passenger and Ticket Agent of the St. Louis, Kansas City & Northern Railway, was elected as a member of the Executive Committee.

The Convention then listened to an able and interesting essay on subjects of general interest to the members, delivered by A. V. H. Carpenter, Esq., the text of which will be given in our next issue. After the delivery of the essay, the Convention adjourned until 3 p. m.

When the Convention had re-assembled, S. F. Pierson was chosen to deliver the essay at the next Convention.

A motion then prevailed to suspend the regular order of business and to take up the miscellaneous business.

On motion of F. B. Myers, the time for the future meetings of the Convention was changed from the third Fridays of March and September to the second Fridays of the same months.

The Executive Committee submitted the following report:

As to matters referred for report.

1st. In relation to the so-called "Kingsbury Ticket and Baggage Check," we refer the subject back to the Association without recommendation.

2d. In relation to settlement of ticket balances, we recommend that the generally-adopted practice of drawing for the actual balances instead of for the face of reports be adopted as the rule of the Association.

As to new business:

1st. We recommend the consideration of excursion rates and forms of tickets for the Centennial season of 1876.

2d. That the practice of accepting tickets issued by individuals or firms not recognized by this Association be discontinued.

B. W. WRENN,
JNO. N. ABBOTT,
E. ST. JOHN, } Executive Committee.

The report of the Committee was accepted and approved, except as to the acceptance of tickets issued by individuals or firms, which was laid on the table.

By invitation of the President, the Convention was then addressed by D. Torrey, Esq., Chief of the Bureau of Transportation of the Centennial Commission, who urged upon the Convention the advisability of making a liberal reduction in the rates of fare to Philadelphia during the International Exhibition of 1876.

The Convention passed the following resolution:

Resolved, That a committee of thirteen be appointed by the chair to present a basis for rates and forms of tickets to be issued for passengers going to the International Exhibition of 1876 at Philadelphia.

The President appointed as this committee: Messrs. Carpenter, Abbott, Cole, Wentworth, Daily, Kimball, Atmore, St. John, Pierson, J. W. Cary, Ford, S. E. Allen and D. M. Boyd, Jr.

The Convention then proceeded to choose a location for the next meeting. At the first ballot there was no choice. The second ballot resulted as follows: Jacksonville, Fla., 31; San Francisco, 23; St. Louis, 5; Baltimore, 1.

The Convention then resolved itself into a committee of the

whole on the subject of rates, and W. P. Johnson was elected Chairman of the Committee.

The Convention remained in Committee of the Whole on Rates until Monday at 6 p. m., when the Committee rose and resolved itself into Convention to hear the report of the Committee on Centennial Rates.

The Committee reported through the Chairman, A. V. H. Carpenter, that they had met, and W. F. Allen, Editor of the *Official Guide*, was elected Secretary. After holding three sessions, they adopted the following resolutions:

Resolved, That as we cannot agree upon a basis for the reduction of rates during the International Exhibition of 1876 at the present time, we request permission to sit during recess, and to report to the members of the Convention by circular the result of our deliberations.

Resolved, That a sub-committee of three be appointed from the members of this Committee to prepare a form of ticket for the Centennial travel, and that each member of the Committee be invited to prepare a form of ticket, and present it to the Sub-Committee for consideration.

Messrs. Cole, Abbott and Boyd were appointed as this Sub-Committee.

It was further resolved, That whatever reduction of rates be made shall be upon the basis of round-trip tickets, good for a period not to exceed thirty days from the date of issue except upon the lines west of Omaha, which lines shall be authorized to make such limit as they may deem necessary for the proper accommodation of their passengers and the protection of their regular business.

Resolved, That for the purpose of securing for each and all of the railway and transportation lines of the country a full, fair and suitable representation in the sale of tickets in the International Exhibition of 1876, and for the further purpose of enabling the Bureau of Transportation of the Centennial Commission to offer to visitors from all parts of the world the most ample facilities for making tours through our country, we ask the Convention to adopt the following resolution:

Resolved, That the Committee on Centennial Affairs be empowered by the Association to negotiate with the authorities of the International Exhibition of 1876, at Philadelphia, for the use of a suitable building wherein to conduct the sale of tickets over the transportation lines of the United States and Canada, and to arrange for the employment of such agents and clerks as may be necessary to conduct the business; and that the Committee be further empowered to arrange for the sale of excursion tickets from Philadelphia at the same reduced rates as may be adopted in ticketing to Philadelphia, the necessary expenses of such arrangements to be borne by the transportation companies in proportion to the gross revenue received by each from the sale of tickets in the Exhibition.

The report of the Committee having been adopted the Convention again resolved itself into a Committee of the Whole on Rates, and continued in committee until 4 p. m. on Thursday when the completed sheet was reported to the Convention and adopted.

The Committee on Lost and Stolen Tickets asked further time, which was granted. Permission was given the Committee to print the opinions they have received, and forward them to the members of the Association.

The following resolution was adopted:

Resolved, That paragraph 1, section 7, of the by-laws of the Association be printed on the title-page of each issue of the tariff of rates.

The Secretary was requested to express to the proprietors of the United States Hotel the thanks of the Association for the use of the room in which the Convention was held, and for the courtesy extended to the members thereof. The Convention then adjourned. During the session the following new members were enrolled:

James Daily, G. T. A., Boston & Providence Railroad.

John C. Printup, G. P. & T. A., Rome Railroad and Georgia & Alabama Steamboat Company.

E. H. Smith, G. T. A., Central Railroad of Georgia.

J. J. Wallace, G. P. A., Intercolonial Railway.

E. Brainard, Jr., G. P. A., steamers City Point and Dictator.

J. L. Kellogg, G. T. A., Davenport & St. Paul Railroad.

F. B. Papy, G. T. A., Jacksonville, Pensacola & Mobile Railroad.

C. F. Spaulding, G. T. A., New London Northern Railroad.

W. B. Williams, G. T. A., Chicago, Danville & Vincennes Railroad.

H. C. Wentworth, G. P. and T. A., Michigan Central Railroad.

F. E. Snow, G. P. and T. A., Canada Southern Railway Line.

D. J. Flanders, G. T. A., Boston & Maine Railroad.

O. G. Murray, Asst. G. T. A., Galveston, Harrisburg & San Antonio Railway.

S. W. Cummings, G. P. A., Central Vermont Railroad.

W. F. White, G. T. A., Atchison, Topeka & Santa Fe Railroad.

The attendance at the Convention was very large, all sections of the country, from Halifax and Jacksonville on the East to St. Paul and Galveston on the West, together with the lines leading to the Pacific Coast, being fully represented.

Tests of Beams, Girders and Columns.

JULY 19, 1875.

A Committee of the United States Board appointed to test Iron, Steel and other Metals has been instructed "to arrange and conduct experiments to determine the laws of resistance of beams, girders and columns to change of form and to fracture."

This Committee, desiring to attract to this branch of the inquiry the best talent and experience of the country, in order to reach results of the greatest practical value, solicits the aid and co-operation of all who manufacture or use beams, girders or columns.

Many experiments have been made by the rolling-mills engaged in the manufacture of wrought-iron beams, the results of which have doubtless been carefully recorded and tabulated. The Committee earnestly asks copies of such records and tables. Engineers, architects and manufacturers have also made many experiments upon cast-iron beams and riveted wrought-iron struts and girders, the results of which are respectfully requested by the Committee.

It is desirable that information as full as may be obtainable, with reference to the constitution and manufacture of the iron used in making the pieces tested, should accompany reports of experiments, especially chemical analyses of the metal, where these have been carefully made.

The proportions of the various parts of the samples tested should be exactly given; and in all riveted work the size and position of the rivets should be clearly set forth. In all cases the modes of applying and measuring the strains should be given.

Accurate cross-sections of the samples tested, drawn to scale, large enough to admit of reliable measurements, will greatly facilitate a proper understanding and analysis of the results.

During the construction of the machinery ordered by the Board, the Committee desires to collect information as above, and to make such experiments as seem practicable by the use of dead loads. For these experiments, and for those which will be made when the machinery is ready for use, manufacturers are asked to supply such beams, girders and columns as they may desire to have most carefully and impartially tested.

It may be of interest to those who are thus asked to contrib-

the costly articles for destruction by tests, to be informed that the machinery ordered is believed to be the best yet designed for testing purposes, and to possess all the nicety and accuracy attainable with the present knowledge of machine construction. The first machine will have a capacity of four hundred tons (800,000 lbs.); and this will be replaced by another of 1,000 tons (2,000,000 lbs.) capacity at an early day.

All suggestions as to the kind of tests to be made, and the manner of making them, calculated to give them the greatest practical value, will be gladly received; and for these and all other assistance rendered, proper acknowledgments will be made. Sample beams, girders or columns, furnished for test, should be stamped at one end with a distinguishing number, trademark and initials of the maker, and forwarded to Col. T. T. S. Laidley, President of the Board, at Watertown Arsenal, Watertown, Mass.

Reports of tests already made, and all other information herein asked for, may be forwarded to the Chairman of this Committee, at Maywood, Ill.

WM. SOOT SMITH, C. E., Chairman, Maywood, Ill.
Lieut.-Col. Q. A. GILLMORE, U. S. A.,
Army Building, New York City.
Chief-Engineer D. SMITH, U. S. N.,
Washington, D. C.

The Regulation of Railroads by Law.

We present below, greatly abridged, but with some passages in full, the address made on the 30th ult. by Charles Francis Adams, Jr., at the North Wisconsin Fair at Oshkosh.

Mr. Adams began by reference to the heat with which political questions are usually discussed at the time they come up. A few years later, when those questions are settled, or are no longer prominent, the great excitement about them seems absurd. This was illustrated by the career of Andrew Johnson, of whom those very men speak kindly and appreciatively who some years before called him the greatest criminal of this or any other age. The speaker would try to be neither extravagant nor very ridiculous, and should not call the farmers of Wisconsin communists nor the railroad corporations soulless monopolies, nor liken them to feudal robber barons, but try to look at things as they really are, to detail his own experience, and submit his conclusions therefrom and the results he is now working for. He said:

"I will begin by asserting a fact—some may at first feel disposed to deny it, but, I think, a calmer retrospection will yield assent to it. Of all the wonderful phenomena in the growth of this wonderful railroad system there is not one so well calculated to excite our special admiration as the ease, the absence of friction, so to speak, with which, taking it altogether, it has adjusted itself to existing political and social organizations. In this respect compare it with more momentous and noisy episodes in history. The French Revolution, for instance, was certainly a very considerable civil convulsion, and, after shaking society to its foundations, left behind it a world forever different from that which preceded it; yet, in spite of its fury and tumult, how small and insignificant seem even the political results brought about by that Revolution compared with those already wrought in the quiet progress of the railroad era. And still, with this engine of all-pervading change working so quietly and imperceptibly before our unseeing eyes, we lash ourselves into a rage because it does not accomplish everything without a ripple on the surface of the water."

The railroad system has made Wisconsin possible. Without population in 1829, when the Rocket was tried and the railroad era began; it had 30,000 souls in 1840, 300,000 in 1850, and nearly four times as many now.

"Here then is one side of the picture—the agreeable side—that upon which we all, and you of the West especially, love to dwell. Is it, however, reasonable to suppose that the picture has but one side, or that that side is all light and no shadow? The rose is proverbial for its thorns as well as for its sweetness and color, and we may be very sure that a hidden bitter must soon or late reveal itself beneath all these railroad sweets. Well, it has developed itself, developed itself with much commotion East and West, and now let us fairly and dispassionately consider what it is.

"So far as the West especially is concerned, I do not think that the cause of the trouble is very far to seek; indeed, in my opinion, it lies so near the surface that I almost hesitate to state it, for where every one is profound it requires some little courage to profess to be a doctor and neither to use learned words nor to suggest potent remedies. Is not the distinctively Western trouble after all just this, that, as is our National wont, we have been going ahead a little too fast—subduing the wilderness too fast, peopling the waste places too fast, building railroads too fast? From my point of view I cannot but think that is the real root of the troubles, and that consequently we are now witnessing—as respects this Western transportation question—a spectacle of not infrequent occurrence on a smaller scale East and West; an altercation, namely, between two partners in a venture which for the moment scarcely promises well. One partner has agreed to lay out and improve farms, the other to build roads to them; accordingly the first has laid out a great many more farms than are immediately required, and the other has built altogether too many railroads to them. The natural consequence ensues in the appearance of a great many impatient landholders, and quite as many disappointed bondholders. The landholder indignantly asserts that the bondholder ruins the value of the farm by charging for carriage all that its produce is worth; and the bondholder, while stoutly denying the accusation, adds that even upon those terms the business doesn't pay. So there it is, and there I fancy it must remain until there is less competition among the farmers and more business for the railroads. The worst of it is, that just at present both parties seem to be telling the truth.

"There is, however, another cause of trouble in connection with the railroad system far more general in its nature. Perhaps, owing to the peculiar industries of the Western States, and their great distance from their markets and sources of supply, this difficulty, also, has made itself felt more distinctly here than elsewhere. I am inclined to think it has; but it is none the less a difficulty common to Massachusetts, with Wisconsin, and destined, as I believe, to be felt more in the future than it is now.

"When they came into existence forty years ago, railroads brought with them some queer results as affecting certain theories on which we had based both our government and political economy. We here in America about that time thought that we had things beautifully arranged; we were never tired of saying that the old world had hitherto been governed a great deal too much, and that the model republic had no business to concern itself in any way with industrial enterprises; that these, of whatever name or nature they might be, would regulate themselves if only left alone to do so under the unimpeded action of the law of competition or supply and demand. Of course, when the existence of railroads became an established fact, they were classed at once with all other established industrial facts under the new governmental and economical dispensation. Accept them, it was said, and leave them alone. Do you not see how bread factories, and shoe factories, and cotton factories regulate themselves if the State only cries 'Hands off!' If you have but faith it will be the same with railroads. It was the teaching of Adam Smith carried to its logical conclusions and applied universally. It was also free trade run mad. Now there are few things better and wiser than free trade in its place. Its place, too, is a very large one—as large, indeed, as the broad limits

within which the laws of supply and demand, of competition, rule supreme.

Unfortunately the railroad system does not belong in this class; it is in its nature a close field. At the very commencement a few clear-headed men saw this difficulty, and at once declared that when, as in this case, combination was possible, competition was impossible, and competition is free trade; they are but different names for one and the same thing. Free trade means nothing but a clear field industrially, with no favors, and the liberty to all to ask what you please and get what you can. Now when the principles of free trade were first enunciated by Adam Smith, just a century ago, it should be remembered that there was scarcely any interest in existence to which they did not apply. Indeed, how many such are there now? Not many. There is the post office, the supply of water and of gas in our great cities, the telegraph, and finally transportation by rail—as respects all these a gradual experience has taught us that they are in their nature matters of monopoly; that to be done most economically they must be done as a whole, and that each new competitor, if he does not deteriorate quality, does increase cost; in other words, the State must either sacrifice its abstract principles and perform these functions for itself, or it must surrender them into private hands, and make the best terms it can for their performance by others. Now this somewhat important principle was by no means understood 30 or even 20 years ago, and even so prominent and clear-headed a public man as Sir Robert Peel was preaching in Parliament the attractively simple doctrine of free trade in railroads. Small wonder then, that under the impulse of our governmental theories, we in this country, and especially you in the West, gave to this idea its widest and most logical expression. The cry was, there could not be enough, much less too many railroads, and their competition one with another would regulate their own profits and secure the community from every extortion. On this principle, railroad construction was invited, nay more, it was stimulated by bounties and land grants and local contributions, until it grew into a destructive mania. The principle was wrong; it was one sure to lead to unexpected and annoying results; it could not but culminate in financial disaster; and yet even now, under all the circumstances, in the full light of subsequent experience, I do not know what other or better policy could have been suggested. All is that when we sow the wind, even allowing that we have nothing better to sow on hand, we have no business to complain when we get a crop of whirlwind.

"Well, the results which the clear-headed foresaw came to pass—came to pass here in Wisconsin as much as anywhere. Competition resulted in combination. Could it do anything else? Under the fierce stress the weaker had to succumb. Where there are but two in a closed field the weaker must go to the wall. Then, too, it became dreadfully apparent that only through the agency of great combinations, operating enlarged systems, and wielding vast means, could cheapness of carriage be secured. To move at the least cost implied movement in the largest quantity. And again, it became very evident at last that competition between railroads led, not to equality, but to the exact opposite; for it was confined to competing points, while all others were left subject to the principle that a competitor was free to charge what he liked, but must be satisfied to take what he could get, and here he could get whatever he liked to charge. This last was the most unexpected and finally ludicrous result of free trade as applied to railroads; the theory fairly collapsed under it. The community, principle or no principle, could not and would not see the business of one point so desperately competed for as to be done for nothing, while the loss so incurred was recovered at the expense of another place over which two or more corporations, for some reason did not conflict.

"Simply stated, then, the great railroad problem, of which so much of late years has been heard, reduces itself to this: Given a new power, apparently not amenable, or at most only partially amenable to old laws, and laws supposed to be fundamental as well as old, what are you going to do about it?"

"To this question the speaker thought the political philosopher would return one answer and the practical statesman another. As to the former, he would be likely to say that here was a force which was rapidly and visibly moulding all human institutions, instead of shallow statutes moulding it; that it was democracy let loose—intelligence broadcast—mobility made possible. More than all this, it was an anomaly, and as such only could it pass through its process of development or work out its mission. As an anomaly it should accordingly be treated, for as such, through statutes or in spite of statutes, it would pursue its own course. Having gradually worked out its development—perhaps ten years hence, perhaps fifty, perhaps one hundred—how will it affect the Government? What relations will it hold to it? That question can easily be decided by the slow course of events; but one thing is clear, that the railroad system irresistibly tends in all countries to concentration and yet closer concentration in the vigorous hands of a few wealthy and able men—men who, knowing their business thoroughly, know also what they want and exactly how to go to work to get it; what is a great deal more, when we say that the railroad system is concentrating in the hands of these men, we mean that it is the whole complicated system of modern internal transportation which is thus concentrating. Mere theories of governmental interference in industrial enterprises, and of reliance for protection on natural agencies, which plainly do not apply, in presence of such a development as this, are empty words brought in contact with hard facts; whether we like it or not, they must and will yield. It is in this case the practical man, too, and not the doctrinaire, who is forcing on the issue, and he is doing it with unparalleled energy and startling speed. See how Scott, and Garrett, and Vanderbilt are developing, each in his own way, but goaded on by the others, the great, universal, irresistible law of railroad concentration. How ludicrously impotent your statutes, and even your constitutional provisions, are to impede or even to hamper them; and how steadily, unitedly, and yet unconsciously they work towards that unity which some successor of theirs, in the next generation, perhaps, will accomplish. What will then result, our political philosopher, perhaps, might foretell; I certainly cannot. Of one thing only do I feel convinced, and that is that, through law or over laws—by developing existing political systems or by gradually substituting others in place of them—in this generation or in the next, some how or in some way, the Government and the concentrated railroad system of the future must and will come together and merge in each other."

Political make-shifts are, however, more in vogue than political philosophy, and statute books of late have been filled with laws intended to regulate affairs. The limits of effective regulation, however, are very narrow, and nine laws out of ten rather defeat than further their objects. In his opinion the force system was all wrong; investigation would show the utter futility of the larger part of our statutes, and, by no means least of all, of those intended to regulate our railroads—"a department of legislation based on the principle that the State must sever itself from all connection with business undertakings, because experience has shown that every such connection tends to waste, to jobbery, and to corruption, and from this basis seeks at once to convert our Legislatures into irresponsible boards of railroad directors; thus substituting a system of organized meddling in place of legitimate business dealings; finally compelling the wealthiest corporations in the country to have recourse in self-protection to systematic legislative corruption, an evil ten times worse than the worst executive jobbery."

Examining the question in the light of practical statesmanship, mindful of experience, slow in reaching conclusions, deal-

ing solely with facts and providing for the present and not for posterity, they would not be surprised that marvelously rapid growth had developed glaring abuses; the only wonder is they are not greater. These abuses concern the owners of the road on the one hand, and its customers on the other.

"The public on the one hand has suffered from the extortions, inequalities and favoritism incident to a fierce competition tempered by close combination and varied by absolute monopoly, while, on the other hand, a system of reckless construction and loose, extravagant, irresponsible administration has more than once led the owner blindfold to ruin; in other words, while the mania of railroad construction was raging, the public was alternately petted and robbed, and the stockholder was cajoled and plundered."

There was nothing about this to puzzle over and be profound about; the only question is, what are you going to do about it?

"To answer this question the practical man would undoubtedly, in the first place, satisfy himself as to the conditions under which the system had grown up. He would see that the difficulty arose from the mistaken attempt to control monopolies by competition; but he would also see that in sober truth our political system does not admit of a successful participation by Government in business undertakings. Finally, and, perhaps, most significant conclusion of all, he would decide, after weighing all the pros and cons, that, when all was said and done, the railroads, in spite of passing defects, both of organization and control, did yet perform their work with wonderful efficiency and accuracy, and that, through them, results once deemed fabulous had now become matters of such daily occurrence as to excite no attention at all.

"Now, I am obliged to confess that under such conditions as these, your practical statesman would at once sweep aside the deep insight and violent remedies of the theorist, saying, wisely enough, that the next generation would, doubtless, prove competent to regulate its own affairs, but his mission was to attend to those of the present. Neither, I imagine, would he have recourse to the constable; on the contrary, he would especially seek to be delivered from his assistance. I fancy he would say, here is a monopoly, or a combination of monopolies, to whom is committed one of the most essential functions of modern civilization. It has abused its trust in the past; the question is how to prevent its doing so in the immediate future. What is it that the society of our time always depends on for the correction of abuses, and almost never depends in vain? And the answer would assuredly be, On the broad light of publicity, on the pressure of an enlightened public opinion. These, after all, are the great purifying and reformatory agents upon which the Government by the people for the people must rest, and upon these rocks of our political salvation the practical statesman will surely resolve to rely for yet a little while. And he would be right, also, for if these fail the constable will not succeed. Light! Publicity! These are what we most need for the bettering of our public affairs; and as respects railroads, these, curiously enough, are what no one has yet cared to think of providing. Yes, it is a fact, that up to this time, and even now, in States which have for years been directing their best acumen toward a harsh and repressive railroad legislation, expending their money no less freely than they have expended their wrath, hardly one step of real progress has been made toward letting light into the dark places, and dragging into the full blaze of day the secrets of corporation rooms. The truth is, we profess a great deal, but we have not much faith. Like the rulers of the Old World, except that we do it in our own way, we always will call on the constable, and we won't be satisfied by throwing the windows wide open so that the whole people may see, and then trusting to them to reform."

Mr. Adams then related the experience of Massachusetts and of himself as a railroad commissioner of that State, from the beginning, six years ago, much as he has done it heretofore; how he first thought the law giving the commissioners authority only to investigate and report to the legislature to be ineffective, because it gave them so little power; how this opinion had been changed by his experience, which showed that the railroad companies are, to a remarkable degree, amenable to public opinion; so much so, that whenever any complaint has been investigated by the commissioners and found by them to be well founded, in every instance their recommendation to the company has been finally respected.

He was sure that this system would work fully as well in the West, notwithstanding the fact that the roads there are owned by non-residents. The difficulty is that Western communities have no machinery through which to formulate their demands and concentrate public opinion behind them.

Another thing aimed at in Massachusetts was to secure uniformity and absolute publicity in railroad accounts, and that in all the States.

"This I believe to be the one vital, radical, all-important measure of railroad reform, in itself including all others. The books of all our railroad corporations should, I do not hesitate to say, be kept on an exactly uniform system, and, like the National Banks, under a rigid public supervision. This, too, for the protection of the stockholder and bondholder no less than for that of the community. An altogether too murky darkness has been hitherto jealously preserved over the intricate science of railroad bookkeeping, and under cover of it endless frauds have been perpetrated; that it is which has led to the abuses of stock-watering and made railroad financing a proverb. And for what? Only to result in periodical discontent on the one hand, and bankruptcy on the other. The old system has ever proved a cover and an invitation to fraud. We should reform it altogether."

If this is brought about the speaker thought that the railroad question would be practically settled for a number of years to come. The discussion has resulted in a substantial victory. The abuses in which the agitation arose no longer exist. The struggle is now over an abstraction. They in Wisconsin now enjoy what is unquestionably, in proportion to their population, the most effective and the cheapest railroad service anywhere to be found.

The discussion would, however, present itself again in the not remote future, as the speaker thought, in a new and more portentous form, and in connection with social questions which it is premature to discuss. His fear, however, was not at all for the future; that will take care of itself. "I do fear for the present, lest that which ought to be done now to provide for the future should remain undone. I want now to see the good seed planted. I want to see publicity as respects railroad corporations secured beyond question while it is yet time; all the rest may then, if need be, rest and sleep for a generation for aught I care. I want also to see a machine perfected through which public opinion can make itself felt—easily, quickly, cheaply. I want to see the system so perfected that any laboring man having good cause for complaint against any, even the wealthiest corporations, may by dropping a postal card into a box do what all the complex machinery of your courts will not enable him to do now—secure an intelligent presentation of his case. I want now to see in every State, and in the Government of the United States, trained officers whose duty it shall be to examine and supervise the accounts of the railroad companies so as to insure in them uniformity, exactness, and publicity, to the end that we may no longer grope our devious way to ruin through the shameful mysteries of railroad financing. Above all, and most of all, I want at last to see the duties, the liabilities, and, though last not least, the rights of the railroad corporations discussed, explained and enforced by public agents, who, knowing that whereof they speak, will not call names, and will see justice done."



Published Every Saturday.

CONDUCTED BY

B. WRIGHT DUNNING AND M. N. FORNEY.

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Editorial Announcements.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

MR. ADAMS' OSHKOSH SPEECH.

Although the speech made by Mr. Charles Francis Adams, Jr., at the Northern Wisconsin Fair at Oshkosh on the 30th ult. enunciated few ideas not presented in the speaker's previous utterances, it is yet one of the most notable of his many excellent contributions to the discussion of the railroad question, and perhaps more likely than any other to have a decided and immediate effect. In the first place, it was, as befitted the place and occasion, a thoroughly popular presentation of the speaker's views—clear, earnest, courageous, and attractive so much so that those who heard it must have listened with attention, and the many thousands more who read it found it attractive enough to read through, striking enough to remember, and convincing enough, we may believe, to have an enduring effect on their ideas of some at least of the relations that should exist between the State governments and the railroad corporations. Then, the reputation of the speaker, joined to the fact that his address was made where the "Granger" legislation has been most extreme, naturally led people to suppose that his remarks would have a special application to the situation in the Northwest, and men there who could not be got to consider arguments and principles in a Massachusetts report or speech, even when brought to them in their home papers, will many of them read eagerly what the most eminent American student of the relations of railroads to the State may have to say of the situation in Wisconsin. Thanks to the newspapers, Mr. Adams' speech has been very widely spread; thanks to himself, it has doubtless been very widely read, in just those States where the laws regulating railroads have most exceeded the limits of the practicable and advisable.

What Mr. Adams says, substantially, is, that whatever evils the West may be suffering are probably chiefly the results of over-production, both of farms and railroads, and not of the oppression of transporters, who, he says, suffer as much as farmers; that, however, in the nature of things railroad tariffs are not subject to the laws of competition which govern most other prices; that this distinguishing feature justifies the treatment of railroad business differently from other business by the law, and may lead eventually to a special adaptation of government or administration to suit the altered circumstances—not simply to control railroad business, but to suit the changes produced in society by railroads; but that, notwithstanding, efforts to regulate the business of railroads by legislation positively directing the railroads what they shall

and shall not do are likely to be failures; and that the wisest and most effective preventive of abuses, and at this time, according to his belief and his experience as Railroad Commissioner for six years in Massachusetts, a sufficient preventive of such abuses, is the enforcement by law of "practical uniformity, approximate exactness, and absolute publicity in all railroad accounts; and this not in one State alone, but in all the States."

Now there is one class of men in the Northwest (and elsewhere), who will in no way modify their action by reason of the opinions and experience of Mr. Adams or any other man, and they have had more to do with hostile railroad legislation than they get credit for. This class is composed of the politicians who frame their conduct with a view to their political advancement. They will talk and vote against railroads and cultivate a hostility to railroads just so long as they can, or think they can, get office in this way. It may be thought that these men only follow a popular feeling, and therefore do not really effect anything different from what the prevailing will of the community would bring about at all events. But this is a great mistake. In times when party lines are not well defined, the creation of new issues becomes a trade with ambitious office-seekers not likely to get what they want from the party dominant at the time. The man who convinces the community that it is outraged, and proposes a reform of the abuse, will be the man most likely to get consideration from the party which makes that reform its leading principle. And it is certainly true that the most active men in the beginning of the crusade against railroads, the men who probably did most to create the feeling that the railroads were oppressing the community, were small politicians, hungry for office, and, under existing circumstances, not likely to succeed in getting any. If of the dominant party, by creating a prevailing or even formidable sentiment, and appearing as the leader in the movement, they were pretty sure to receive attention from that party when otherwise they would have no influence; if of the minority, they could hope by a new issue to form a majority party, with themselves at the head. And the question being outside of the ordinary issues, and not interfering with them, the old parties, whenever there seemed to be a considerable number of persons whose votes would be governed by the new issue, have quite generally endorsed it wherever they would not lose votes by such endorsement. Thus we have no doubt that the hostile legislation of the Northwest has been based upon a sentiment largely of artificial production, and after all not so wide spread as was supposed even by the very members of the legislatures which passed the hostile laws. It is a state of things liable to occur wherever an issue is introduced which has not some interested opponents. Here in a community casting 5,000 votes are a hundred voters anxious for a law reducing railroad tariffs one-half, and (which is the important thing) not one who will vote against a candidate whose party endorses such legislation. Now to a nominating convention of either party the question presents itself in this way: "If we condemn a railroad tariff law, we shall certainly lose a hundred votes, and we shall not gain one; if we ignore such a measure, we shall certainly gain no votes, and if the other party endorses it we shall lose a hundred; if we endorse the measure, we shall gain a hundred votes if the other party does not do the same thing, and if it does we shall divide these votes, all of which otherwise it would gain." Now there can be but one result under such circumstances. The sentiment of 2 per cent. of the voters determines the declaration of principles, the announced policy of the parties to which the whole number belongs; and, though candidates so chosen for the most part are not very determined in their efforts to carry out the measure promised by their parties, yet it may easily happen, in a State where there is scarcely any interested opposition, that almost every member of the legislature is chosen under a promise to advocate a law which only a small minority of their constituents really desire.

This would be impossible, of course, if any considerable number of the voters had interests which would suffer by the proposed legislation. And then, too, it would not be possible to create an unfounded hostility even to the extent that such hostility actually exists in the Northwest. But in the actual condition of things, there are few interested in preventing the creation of hostile sentiment, and hardly any interested in denying to this sentiment, even when it is not well spread, anything that it may ask. Thus the sentiment of hostility to railroads has had an almost unobstructed growth in the Northwest, and this sentiment has received a recognition in party platforms, in the selection of candidates, and finally in legislation, vastly out of proportion to the actual sentiment. There has been almost nothing in the way; the parties to be injured were for the most part distant, without local influence, with little more than the justice of their cause to defend them, and that not self-evident and perhaps not well presented, or not presented at all. Now the laws are passed, it seems even more difficult to have them repealed than it was to prevent their passage, as it usually is more

difficult to have a thing done than to prevent the doing of it.

If the mass of the voters in any State feel that they are actually injured by existing laws, or that their condition may be bettered by different ones, then it will be easy enough to change the present policy; indeed, it will be hard to prevent a change. If the public becomes generally convinced that the existing laws are useless simply, then an effort on the part of railroad proprietors, the parties oppressed, though having little political influence, may secure their repeal; not so much because of a desire to favor them as because there are no objections within the State. But as long as a considerable number of voters earnestly favor the existing laws, it will not be easy to repeal them. Such a measure would mean the alienation of voters without attracting any in return.

We do not mean to say that a general sense of the injustice of the laws would not create a popular sentiment against them; it doubtless would and to a considerable extent already has; but it is extremely difficult to make a community composed wholly of customers of railroads, with next to no railroad proprietors among them, consider thoughtfully and without prejudice the proprietors' side of the question, as they would to a much greater extent if their friends and neighbors held railroad bonds and shares. Nearly all the talk they hear and the interests with which they come in contact are on one side of the question.

But what Mr. Adams had to say of the effectiveness of a system which exercises no force ought to and perhaps will have a decided effect. Oppressive as the Wisconsin law has been, it has proved of very little direct advantage to the people of that State and has been undoubtedly indirectly a considerable disadvantage. If the people are convinced that they will fare better under a system which secures easy and inexpensive investigation of complaints and publicity in the affairs of the railroads, they will not need much urging from the railroad proprietors to induce them to substitute such a system for their present inflexible regulations.

A Rapid Transit Experiment.

On Saturday last a party of gentlemen were invited by General Roy Stone, the Phoenix Iron Company and Messrs. Clarke, Reeves & Co. to visit the works at Phoenixville to witness a trial of a new elevated railroad designed by General Stone. The party from New York consisted of Gen. J. G. Barnard, General Wright, Professor Thurston, Dr. Hayes; Mr. Wyman, Superintendent of the Greenwich Street Elevated Railroad; Mr. John H. Burton, President of the Brooklyn Elevated Railroad Company; Mr. D. Smith, Secretary of the Car-Builders' Association; Mr. Frank Thurston, and representatives of New York newspapers. At the Germantown Junction, Messrs. J. Newbold, R. H. Lamborn, C. S. Tyson, G. G. White, and Mr. Cole joined the party. Mr. Clarke met the party at Jersey City and Mr. Reeves joined them at Germantown Junction. Later in the day Mr. F. B. Gowen, President, and several of the directors of the Philadelphia & Reading Railroad Company also visited Phoenixville to see the new road.

In design, it belongs to the class of roads usually called single-rail roads, although it really there are three rails. The weight, however, is carried on one rail, the other two serving merely to steady the cars and engine. These are carried on a truss, the cross section of which is of triangular form. The rail which carries the weight, which is of the ordinary pattern, occupies the apex of the triangle, and the other two the angles adjoining the base. The Phoenix Iron Company has erected about 800 feet of track, in which there is a curve of 90 feet radius. The greater part of this is constructed of wood, but two spans were completed of iron, and about half a dozen more iron spans are in progress. These are carried on single Phoenix columns, 8 in. in diameter, attached to cast-iron bed plates, which are bolted to masonry foundations. The trusses are composed of angle iron and flat bars riveted together. The top rail rests on a longitudinal wooden stringer 4x6 in. in section. The two side rails consist of angle bars. The distance from the top rail to the base of the triangle is 4 ft. 5 in., and the length of the base is 3 ft. 5 in. The length of the spans is 50 feet from center to center of columns, and the estimated cost of the structure is \$100,000 per mile of single track.

An engine and car have been built for equipment on this line. They are of very novel construction. As their weight rests on a single rail, it is necessary to suspend them on this rail, and in order to keep them in position, to place a very considerable portion of the weight below the top rail. They are therefore made on what, with somewhat solemn facetiousness, has been called the "sand-bag" plan—that is, they hang as it were on the two sides of the truss. The weight of the car is carried on two wheels, 28 in. in diameter, which have double flanges, and are 12 ft. 9 in. from center to center. The passengers are carried in two tiers, one above the top rail. These latter are seated in longitudinal rows facing each other, as in an ordinary horse car. The lower tiers are one on each side of the truss. In these the passengers are also seated in longitudinal rows, but face outwards. The bottom of the portion of the car occupied by these second tiers is very nearly level with the bottom of the truss. On the outside of this lower portion of the car there are platforms, or more properly, running boards, on each side, so that the conductor can pass without incommencing the passenger. The car is supported laterally by two horizontal wheels on each side 20 in. in diameter, also with double flanges and with rubber tires.

These wheels have several inches of vertical motion on their axle, so that in case of the breakage of any portion of the upper

running gear, they would not be thrown off the lower rails. They are placed 12 ft. 9 in. from center to center. The car is 30 ft. 6 in. long over the body, and 9 ft. 6 in. wide, and 12 ft. 6 in. wide over the outside longitudinal platforms. Access to the upper compartment is provided by stairways at each end, by which passengers can reach both the upper seats and also cross over the truss to the lower seats on the opposite sides. The car seats 60 passengers, and weighs 8,400 lbs., or 140 lbs. per passenger.

The running gear of the engine is very similar to that of the car, but its construction is otherwise very novel. The engines are of La France's rotary pattern, which have been used very extensively by the La France Manufacturing Company, by whom this engine and car were built, for steam fire engines and pumping engines. The construction of this engine resembles two cog wheels which gear into each other and are enclosed in a steam-tight case. If steam is admitted on one side of these wheels the engines are driven in one direction, and if admitted on the other the motion is reversed. Two of these engines are used, one connected to each driving-wheel, and they are reversed by a very ingenious throttle-valve, the construction of which it is impossible to make clear without engravings. The chief difficulty, however, with an engine for this kind of road is in adapting a boiler to it. In the locomotive we are describing, two vertical boilers are provided, one on each side of the truss. It is, therefore, necessary to maintain two fires. The boilers are made on the base-burning principle, similar to ordinary stoves of that kind. That is, they have a vertical central flue 12 in. in diameter, which extends from the fire-box to the top of the chimney, so that, ludicrous as it may seem, the coal is fed in from the top of the chimney, Santa-Claus fashion. The two boilers, we feel sure, will prove a very serious objection to the engine, and whether the rotary engines will prove to be economical, either in fuel or repairs, is, we think, exceedingly doubtful.

Owing to a change in the arrangement of the exhaust, and also to the absence of a blower, the engine would not steam very freely, and it was an hour or two after the arrival of the party before its operation could be shown to advantage. It is, of course, impossible to form an opinion which will be of much value of so novel a structure without seeing its operation on a more extended scale, and under conditions approximating more nearly to those of actual practice than those which an experimental line of this kind afford. The engine, however, worked very smoothly and passed around the curve of 90 feet radius with apparent ease, and the car affords all necessary comfort to passengers. A difficulty presents itself, however, in the arrangement of switches, and a crossing of one such a line on the same level with another seems almost impossible. These difficulties are, however, not unsurmountable, and we believe the plan possesses some very great advantages for rapid-transit roads in cities. Among these are the impossibility of cars or engines running off the track, or rather off the truss. To quote the language of the Report of the Committee of the Society of Civil Engineers, "a rapid-transit road must not only be safe, but it must appear so," otherwise persons will not ride on it. Another advantage is its low cost, which is less, we believe, than that of any other plan; and a third, the fact that the road structure occupies less space—that is cubic space—in the street than any other. We are, therefore, ready to adhere to what we wrote three years ago in commenting on a similar road which was built in Aleppo, Syria. As these comments are equally applicable to General Stone's road as to that, we quote in full what we then said:

"The first impulse on seeing and hearing of these plans is to smile at their apparent absurdity, and yet it is by no means certain that they are as ludicrous as they appear. In fact, on examination it will be found, we think, that the proposed system presents many advantages for a road through a crowded city, where passengers alone are to be transported. It would, in the first place, occupy but little room, and be hardly any obstruction to light, ventilation or travel on the street where it is located. The posts could be located at the curb-stone—where telegraph poles are usually placed—so as not to obstruct either the street or sidewalk any more than it is now. Second, the cars would be perfectly safe, as it would be impossible for them to run off the track. Third, the road and its equipment would both be very much less costly than any of the plans yet proposed for rapid transit in New York.

"These advantages, we believe, are worth serious consideration. It should be remembered, however, that the success of such a project would depend almost entirely upon the way it was worked out, and this could only be done well by persons of ripe experience, skill, ingenuity and—common sense."

Cotton Traffic.

The crop year for cotton begins with September. The great importance of the crop as an export and as almost the sole marketable product of a large part of the country, together with its compactness and the uniformity of the packages into which it is made, and the almost total lack of home consumption, cause the statistics of the product and sales to be kept more accurately perhaps than those of any other American crop. When we say there is almost a total lack of home consumption, we do not mean, of course, that no cotton is consumed in the United States, or even that none is consumed in the States that produce cotton; but that scarcely any is used on the plantations which produce it. In this it is quite unlike grain. It is simply impossible to collect accurate statistics of the production of corn in this country, for the reason that most of this crop is devoured on the very farms that produce it, and other large portions are consumed in the neighboring towns; while the part that reaches the great grain centers for distribution to distant markets, either home or foreign, is a mere trifle compared to the whole. The same is true of oats; and if not true of wheat, it is because wheat is used only as food for men, and we know approximately the population at any given time, and the average consumption per individual.

The returns of the crop of 1874, with the sources of the supply, the destinations, and the quantities moved by the leading routes, are given in a late number of the *Commercial and Financial Chronicle*, which is an acknowledged authority on

this crop. From it we obtain the figures on which this article is based.

The receipts of cotton for the two years past, and the exports, have been, in bales:

	Crops.	Exported.	Manufactured.
1874-75.....	3,892,991	2,084,708	1,193,005
1873-74.....	4,170,388	2,840,981	1,306,943

The average weight of bales was 468 pounds in 1874-75, and 469 the previous year, and the total tonnage of the crop was 978,371 tons in the earlier, and 893,467 in the later year, the decrease being 84,904 tons, or 8½ per cent. The whole crop has about the weight of two weeks' production of the Pennsylvania anthracite coal mines, or two months' shipments of grain from the lake ports.

Of the whole crop 70 per cent. was exported last year, and 68 per cent. the year previous. The domestic consumption fell off about 9 per cent., the exports 6 per cent.

The primary receipts at the leading ports, excluding receipts at one port from another port, were, in bales:

	1874-75.	1873-74.	1874-75.	1873-74.
Galveston.....	368,283	389,045	9.5	9.3
New Orleans.....	993,775	1,221,698	26.0	29.3
Mobile.....	320,822	299,578	8.4	7.2
Fernandina.....	10,982	14,185	0.3	0.3
Savannah.....	603,246	625,857	15.8	15.0
Charleston.....	438,897	438,194	11.4	10.5
Wilmington.....	101,715	57,895	2.6	1.4
Norfolk.....	418,114	505,876	10.9	12.1
Interior.....	446,674	489,534	11.7	11.8
Manufactured South.....	130,483	128,526	3.4	3.1

This gives the receipts as they first reach the sea-board, and not where the cotton is first marketed or even at the primary distributing market. Memphis, for instance, shipped 427,001 bales in 1873-74, and 325,263 in 1874-75; but last year 21 per cent. of these shipments went to New Orleans and 28 per cent. to Norfolk and other ports, and this part of the shipments are counted with the receipts of these ports.

Last year 43.9 per cent. of the crop was received at Gulf ports; the previous year, 45.8 per cent. The proportions of shipments direct to Northern markets were about the same in both years—11½ per cent. New Orleans, though receiving more than a half more than any other port, lost the most ground. Mobile, Savannah, Charleston and Wilmington rose in position, and Galveston slightly. The relative proportions, however, of the leading ports have not changed sufficiently to alter much their position in the rank receivers. The order was New Orleans, Savannah, Norfolk, Charleston, Galveston and Mobile in 1873-74; it was New Orleans, Savannah, Charleston, Norfolk, Galveston and Mobile last year. Charleston and Norfolk change places; the rest remain as they were.

The only places showing an absolute increase in their cotton traffic are Charleston and Wilmington, the former a slight one, the latter nearly 80 per cent.

Not very long ago most of the cotton of the South reached the seaboard by river steamboats; there remains a large movement on the Mississippi and its navigable southern tributaries, and some on the streams having their outlet at Mobile, and there are steamboats in some of the rivers which carry to railroad lines, but the greater part of the cotton now reaches the seaboard by rail, and much and an increasing proportion is sent long distances by rail, as from Memphis to Norfolk, and even from Texas by way of St. Louis to New England manufacturing towns.

The rail shipments to manufacturers and to Baltimore and ports further north are reported to have been 461,761 bales, or 12.05 per cent. of the crop last year, against 497,083 bales, or 11.9 per cent. of the crop, the year previous. Of these overland shipments, last year 241,335 bales, or 52 per cent., went to New York, Boston, Philadelphia, Baltimore and Portland, and were partly exported.

The amounts of these shipments by the different routes are given as follows by the *Commercial and Financial Chronicle*, by whose figures for this year we have placed those given by it last year, for the sake of comparison:

	1874-75.	1873-74.
Shipments for the year from St. Louis.....	123,805	92,196
Carried North over Illinois Central Railroad, from Cairo, &c.....	37,972	4,600
Carried North over Cairo & Vincennes Railroad.....	30,683	14,783
Carried over Mississippi River above St. Louis.....	8,474	6,148
Carried North over St. Louis & Southeastern, less deductions.....	5,458	6,604
Carried North over Evansville & Crawfordsville, less re-shipments.....	9,376	27,749
Carried North over Jeffersonville, Madison & Indianapolis R. R.....	110,733	134,097
Carried North over Ohio & Mississippi Branch.....	67,944	82,530
Carried over Wash. City, Virg. Mid. and Great Southern R. R., from Danville to Baltimore.....	31	
Shipped through Cincinnati by Louisville, Cincinnati & Lexington R. R. River.....	21,189	31,775
Receipts at Cincinnati by Ohio River.....	34,086	71,501
Shipped to mills adjacent to river and to points above Cincinnati.....	12,000	21,000
Total carried overland.....	461,751	497,083

This overland movement as a whole, therefore, shows a decrease of a little more than 7 per cent., which is less than the decrease in production. In the earlier year 11.9 per cent. of the crop moved by these routes; last year 13 per cent. Very great changes are shown in the quantities by different routes. The movement by St. Louis increased one-third, that by Louisville fell off one-fifth. The opening of the Missouri, Kansas & Texas, and the St. Louis, Iron Mountain & Southern roads to Texas connections have greatly increased the advantages of St. Louis as a cotton market, and it has already become a respectable one, having shipped last year an eighth as much as New Orleans, and a third as much as Galveston.

Government Survey for a Railroad from the Tennessee River to the Atlantic.

One of the recommendations of Senator Windom's Senate Committee on Transportation was for the survey of a route for a freight railroad from navigable waters of the Tennessee River to tide-water. Mr. John E. Thomes, who was engaged in the surveys for the Union Pacific, the Northern Pacific and the Texas & Pacific railroads, was put in charge of this survey

The line surveyed begins at Guntersville, Ala., on the big bend of the Tennessee River, which is the point on the river nearest the Atlantic. There was no point specified for the tidewater terminus of the line, the orders being to find the line which would make the cheapest route for a freight railroad. The engineer decided that such a line would be the one with the best harbor at tide-water, the lightest grades and the best alignment. For the harbor Brunswick, in southeastern Georgia, about a hundred miles southwest of Savannah, which has one of the best ones on our southeastern coast, was chosen. It is distant about 360 miles in an air line nearly due southeast from Guntersville.

The route from Guntersville ascends till it crosses Sand Mountain, crosses the Coosa River at Gadsden, and, passing through Cleburne County, Ala., enters Georgia in Haralson County, and continuing a general southeasterly course passes 44 miles south of Atlanta, 17 miles southwest of Macon, and thence very near the line of the existing Macon & Brunswick Railroad to Brunswick, on a line very nearly straight. The whole line is 412 miles long, and nowhere diverges more than five miles from an air line. It passes through four counties in Alabama and sixteen in Georgia, including some of the best parts of these States. The grades are:

On 90 miles.....	from 40 to 50 feet per mile.
" 159 ".....	" 20 " 40 " " "
" 158 ".....	" 0 " 20 " " "

The great coast forest of long-leaved pines, which extends from Virginia to Texas, in Georgia reaches back about 200 miles on the line of this road, and most of it is worth little for cultivation, but in parts supplies lumber and naval stores. The harbor of Brunswick is said to be much better than those of Savannah and Charleston, but like the other superior harbors of Port Royal and Fernandina, it has never been able to divert any trade worth mentioning from those cities, which were built up originally because they were outlets for important river routes, while Brunswick and Port Royal were not, and have now the advantage of established trade and extended railroad systems. Brunswick has had two railroads completed since the war, both of which are hopelessly bankrupt, while neither has ever had a respectable traffic, though their western termini are at the greatest cotton centers of Georgia—Macon and Albany.

The railroad is proposed as an outlet for the grain and other produce exported from the Mississippi valley. To bring the produce to the railroad, it is proposed to improve the Tennessee River so as to secure three feet of water below Guntersville at the lowest stages, to do which it will be necessary to construct some short canals around shoals.

Any one acquainted with the export trade in grain and provisions knows that if this route is ever completed it will never get any of the export traffic worth mentioning. If useful at all, it will be for carrying grain and provisions to supply the local Southern demand. It would cost more to take grain from Cairo to Guntersville than to float it to New Orleans; and New Orleans has never been able to make any figure as a grain exporter. The railroad route from Guntersville to Brunswick is about as long as that from Buffalo to New York. There have long been railroad routes in operation from navigable waters on the Tennessee to the Atlantic and the Gulf, though less direct than the one proposed; but these railroads carry no northern products south for export, and of late years they have received scarcely any traffic from Tennessee River boats. If the river were improved, probably these boats would be better able to compete with the railroads; but the route is simply an absurd one for export traffic.

Record of New Railroad Construction.

This number of the *Railroad Gazette* has information of the laying of track on new railroads as follows:

Buffalo & Jamestown.—Completed by an extension westward 3 miles to Jamestown, N. Y.

Cincinnati, Wabash & Michigan.—Extended from Marion, Ind., southward 12 miles to Fairmount.

Midland Pacific.—Extended from Nebraska City south by east down the Missouri River 22 miles to Brownsville, Neb.

Santa Cruz & Felton.—This line, of 3-feet gauge from Santa Cruz northward 6 miles to Felton, Cal., is completed.

This is a total of 43 miles of new railroad, making 804 miles completed in the United States in 1875, against 1,101 miles reported for the same period in 1874, 2,778 in 1873, and 4,970 in 1872.

THE ART OF GETTING FREE PASSES has been developed in a peculiar manner, if we may believe the *Detroit News*, by the American consul at Suspension Bridge. Mr. Broughton, the new English manager of the Great Western Railway of Canada, is said to have refused him a pass. The *News* says: "That official thought this was a little rigorous, and resolved to imitate the good example set before him, and commenced to do the duties of his office in a rigorous manner. He accordingly detained a train of cars laden with perishable goods for twenty-four hours, while he made a rigorous and detailed examination of the contents of each car. This brought the Broughton to his senses so far as the consul was concerned, but it had no effect on his subsequent conduct." It is hard to believe this story, but if it is true, evidently there is a man in the diplomatic service of the nation who ought rather to be in the penitentiary, and it will be a shame if he is not dismissed.

The Structures for a City Railroad Authorised by the Rapid Transit Commissioners.

The following are the conclusions of the New York Rapid Transit Commissioners with regard to the kinds of structures which may be built in the city:

Upon motion of Mr. Brown, seconded by Mr. Delamater, it was, on the 4th day of October,

Resolved, That the Commissioners appointed by the Mayor of the city of New York, under and in compliance with the provisions of chapter 606, Laws of 1875, having by public notice

invited the submission of plans for the construction and operation of a railway or railways for the purpose provided for by said act, and having examined and considered the numerous plans and devices submitted to them, do hereby select and decide upon the plans, as follows, for the construction of such railway or railways, with the necessary turnouts, etc., upon the route or routes and in the locations determined by them by preambles and resolutions adopted on the 3d day of September, 1875:

1. The general plan or plans of the structure shall be of an elevated railway, with the track or tracks supported upon a row or rows of columns; the track or tracks shall be carried by longitudinal girders, resting either upon the tops of the columns or upon transverse girders supported by the columns.

Where the width of the street, between the curb-stones, does not exceed 36 feet, the plan of construction shall be as follows, as the company constructing the railway shall elect, i. e., either—*First*, with a row of columns on the line of each curb, and a superstructure carrying two tracks upon transverse girders spanning the street; or, *Second*, with a row of columns upon the line of each curb, and a superstructure carrying a single track over each row of columns; or, *Third*, with gothic transverse arches spanning the roadway of the street from curb to curb and carrying longitudinal girders.

3. Where the width of the street, between the curb-stones, is more than 36 feet and less than 55 feet, the plan of construction shall be as follows, as the company constructing the railway shall elect, i. e., either: *First*, with a row of columns on the line of each curb, and a superstructure carrying two tracks upon transverse girders spanning the street; or, *Second*, with two rows of columns, the one upon the line of either curb and the other along or near the center line of the street, and a superstructure carrying two tracks upon transverse girders spanning the portion of the roadway of the street between the two rows of columns—but this plan is allowed only in New Church street, and in case of a street where there is no existing street railroad upon the surface of the roadway; or, *Third*, with a row of columns upon the line of each curb, and a superstructure carrying a single separate track over each row of columns—but this plan is not allowed along or over Second avenue, between East Houston street and East Twenty-third street; or, *Fourth*, with gothic transverse arches spanning the roadway of the street from curb to curb, and carrying longitudinal girders.

4. Where the width of the street or avenue between the curb-stones is 55 feet or more, the plan of construction shall be as follows, as the company constructing the railway shall elect; i. e., either—*First*, with a row of columns upon the line of each curb and a superstructure carrying two tracks upon transverse girders spanning the street; or, *Second*, with two rows of columns in the roadway of the street, and a superstructure carrying two tracks upon transverse girders—but no column authorized in this plan of construction shall be erected between any two tracks of street railroad upon the surface of the roadway; or, *Third*, with a row of columns upon the line of each curb, and a superstructure carrying a single separate track over each row of columns—but this plan is not allowed along or over Eighth or Ninth avenue between West Sixty-first street and West One-Hundred-and-Tenth street; or, *Fourth*, with gothic transverse arches spanning the roadway of the street from curb to curb, and carrying longitudinal girders.

5. Whenever a column or row of columns is above authorized to be upon a line of curb, such column or row of columns shall be erected only within the line of curb-stones, and shall be there so situated and placed as not to obstruct vehicles or the ordinary traffic or travel in the roadway of the street.

6. There shall not be more than two rows of columns or more than two tracks in any one street or avenue or public place, except as hereinafter authorized.

7. No column shall be erected between any two tracks of street railroad now upon the surface of the roadway of the street—except in New Church street, as hereinbefore authorized.

8. Except where the width of a cross street, between the curbs thereof, is fifty feet or more, every cross street shall be spanned by a single span, when and where the plan of construction used is one having a row of columns upon a curb line.

9. When and where the plan of construction used is one having two rows of columns in the roadway of the street, no column shall be erected within the curb lines of a cross street, elsewhere than upon the center line of such cross street, but may be there erected.

10. A single or double track may be placed between longitudinal girders and carried by iron floor-beams, the latter supported by the longitudinal girders.

11. Where columns are authorized to be in the roadway on each side of a street railroad track upon the surface of the roadway, the transverse distance between the columns shall be at least twenty-one feet in the clear.

12. The transverse diameter of a column authorized to be in the roadway of any street, shall not exceed fifteen inches at the base and thence for at least ten feet above the surface of the roadway; and the transverse diameter of a column authorized to be on the line of a curb, shall not exceed twenty-six inches at the base and thence for at least ten feet above the surface of the roadway.

13. The transverse diameter of columns, above indicated, does not include fenders; and adequate fenders shall be fitted around the base of each column placed in the roadway, to prevent the hubs of the wheels of passing vehicles from striking the column.

14. Where authorized to be in the roadway, no column shall be nearer than five feet to the house line of the cross street, but every column erected in the roadway of the street shall be set back at least five feet from that line.

15. The longitudinal distance between the columns, when both rows are in the roadway, shall not be less than 35 feet.

16. The longitudinal distance between the columns on the curb shall be at least 25 feet.

17. On curves of 300 feet radius or less the longitudinal distance between the columns in the roadway may be reduced to not less than 25 feet.

18. No part of the girders or superstructure shall be less than 14 feet above the level of the street, except on a summit, where, when necessary on account of grade, the height of the lowest part of the girders, above the roadway of the street, may be reduced to 12 feet.

19. The girders may be either plate or lattice, or any suitable form of truss, and shall not be continuous over more than two spans.

20. Upon every track there shall be two continuous longitudinal stringers, of sufficient size, of the best quality and kind of timber suitable for the purpose. The joints of such longitudinal stringers shall be scarfed and bolted, and such stringers shall be securely fastened to every support on which they rest, so as to tie the structure firmly together and give it stiffness in a longitudinal direction. This requirement may be fulfilled either by longitudinal stringers under the rails, or by safety-guards of timber, if made to comply with the above conditions.

21. The material used for that part of the structure above the ground, shall be wrought-iron or steel—except that the connections between the posts which form a cluster column may be of cast-iron—and except the rails, which shall be of steel—and except the ties or longitudinal stringers supporting the rails, which shall be of the best quality and kind of selected timber. The safety-guards, if of wood, shall be of the best quality and kind of timber. Wood shall not be placed in any position where it may not be readily renewed without interrupting the travel on the road.

22. The wrought-iron shall be of the following general character: Tough, highly fibrous, and of a quality which shall be in every respect equal to that used in first-class American iron railway bridges.

23. No part of the structure shall be subjected to a greater strain of tension or compression than 9,000 pounds to the square inch; and no part shall be subjected to a greater shearing strain than 7,500 pounds to the square inch, and the structure shall not be proportioned for a less moving load than 1,200 pounds per lineal foot for each track.

24. The maximum deflection of any girder under the passage of a train shall never exceed 1-1500 of its length.

25. The plates composing the longitudinal parts of a column or girder shall be in single pieces, except in the case of a girder of more than 40 feet in length.

26. All rivets shall be of double-refined iron, which shall have an ultimate tensile strength of 60,000 pounds to the square inch. The rivet holes shall be truly and accurately opposite each other; and the rivets shall enter the holes without drifting or forcing, and shall fill the holes.

27. All parts which make up the section of a column, except where cluster columns are used, shall be of equal thickness and of uniform quality.

28. The strength of the columns shall be proportioned by Gordon's formula for the ratio of the diameter to the length, with five as a factor of safety.

29. The different parts of the structure and their connections shall be properly proportioned to resist all of the momentum of the train which can, by the application of brakes, or in any other manner, be imparted to the structure.

30. The foundations for the columns shall consist of brickwork, stonework or concrete.

31. The masonry for foundations, where the span is 50 feet, shall measure at least 4½ feet square upon the top, at least six feet square at the bottom, shall be at least four feet in depth, and shall rest upon two thick blocks of granite or other flagging, three feet by six—so as to make a base for the masonry not less than six feet square. When the span is more than fifty feet the dimensions of the foundations shall be larger, and when the span is less than fifty feet, the dimensions of the foundations may be smaller; but the foundations must, in every case, have as much stability relative to load as is above required.

32. The earth is to be prepared for this masonry by being made firm and solid, and covered with a bed of good hydraulic mortar.

33. Every column or post shall be secured to the masonry by means of a heavy plate of cast iron, so proportioned as to distribute the weight which comes upon it uniformly over the foundation; this plate shall be fastened by sufficiently strong wrought-iron bolts passing through the masonry—the bolts having heads which shall be upset and not welded, and having washers of sufficient size beneath the stones above-named and immersed in the bottom bed of hydraulic mortar. The cast-iron plate, its connections with the column, the wrought-iron bolts, and their heads and washers shall possess sufficient strength to receive and resist, equally well with the column, all strains that can come upon the latter. The cast iron shall be of the best quality suitable for bed plates which are to be covered under ground, and all castings shall be sound and fair.

34. All the iron work beneath the surface of the street shall be covered with hydraulic mortar or in some way protected from rust.

35. Good hydraulic cement shall be used in the masonry, and Portland cement of the first quality shall be used in case the foundations are constructed of concrete. If bricks are used they shall be hard burnt and of the best quality.

36. The foundations, where necessary, shall be increased in area so that in no case shall a weight greater than 2,000 lbs. to the square foot come upon any base.

37. All wrought-iron work shall receive one coat of metallic paint and oil before leaving the shop, and immediately after erection shall receive at least two coats of good paint. All parts of the structure shall, where practicable, be made accessible for the purpose of painting, and shall be well protected from rust where not accessible.

38. Efficient safety guards shall be provided, so that, in case of accident, the cars shall be effectually prevented from leaving the structure.

39. The best form of continuous brakes, so arranged as to be under the control of the engineer, shall be applied to all trains, and to every car in each train.

40. Every switch shall be of such design that, if left open or placed wrong, it cannot break the main track or offer any impediment which may cause the derailment of a passing train.

41. Rails shall be of steel, not less in weight than fifty pounds per lineal yard; they shall be laid and fastened in the best manner as regards security, level and parallelism, and great attention must be given to the rail joints.

42. The railway must be equipped with the most approved system of signals to guard against accidents; and there shall be the necessary telegraph and signal devices.

43. Stations shall be so arranged as to be convenient of access from the street.

44. There shall be no steps (other than those leading from the street), sills, or any other projections about stations, over which persons can trip or stumble.

45. The platforms of stations shall be on a level with the platform of the cars; and nothing shall intervene between a platform and the cars that must be stepped over to enter a car.

46. Each station shall have ample space, under cover, to accommodate the passengers.

47. Where two rows of columns are authorized and either row is placed in the roadway of the street, the columns shall be erected in pairs, and both columns of each pair shall stand in line upon a line at right angles to the direction of the length of the street.

48. The stairs and all parts of the stations, except the platform, doors, windows, and inside sheathing, and except the tread of the stairs, shall be of iron.

49. All station platforms and stairs shall be protected by a substantial iron railing.

50. Every axle shall be of steel of a quality best suited to the purpose, and shall be subjected to such tests and safeguards, and be of such dimensions as are usual in first-class railway practice.

51. Every wheel, whether of a car, locomotive or tender, shall have a tire of steel of the best quality and form suited to the purpose, and shall be turned on the tread. The wheels shall be fitted with the best known means of deadening noise and preventing jars.

52. Authority is given for construction of such supports, turnouts, switches, sidings, connections, landing-places, stations, buildings, platforms, stairways, elevators, telegraph and signal devices, and such other requisite appliances, upon the route or routes, and in the locations determined by the commissioners, as shall be proper for the purpose of rapid transit railways, and as shall be necessary to meet the requirements of the traveling public.

53. All car axles shall be provided with the best devices used in railway practice to catch the axles and prevent them from getting adrift in case of fracture.

54. The structure shall present a substantial and tasteful appearance.

55. On River street westerly from Fourth avenue, and on Eighth avenue northerly from One Hundred and Fifty-fifth street, the railway may be constructed as a surface railroad upon the grade of the street; it shall be a double-track road.

56. All of the materials used in the construction of the work shall be of the best quality for the purposes for which they are to be applied; and the work shall be executed in the best style of the arts, and in a workmanlike manner.

57. It is the intention and spirit of these specifications to provide in every respect for a first-class structure, and no omission of specific requirements to this effect, if any exist, shall in any case be construed in any way to invalidate this general requirement.

58. These specifications shall be incorporated into and shall constitute an essential part of every contract made by the company for material or construction.

General Time Convention.

SECRETARY'S OFFICE, PHILADELPHIA, Sept. 15, 1875.

In accordance with a resolution passed at the last meeting, the regular semi-annual meeting of the General Time Convention will be held at the Grand Pacific Hotel, Chicago, on Wednesday, Oct. 13, 1875, at 10 A. M.

W. F. ALLEN, Secretary.

Notice has been received that the following named roads will be represented at the Convention:

Atchison, Topeka & Santa Fe R. R.
Atlantic & Great Western R. R.
Baltimore & Ohio R. R.
Boston & Albany R. R.
Buffalo, New York & Philadelphia R. R.
Burlington, Cedar Rapids & Minnesota R. W.
Cairo & Vincennes R. R.
Canada Southern R. W.
Cincinnati, Lafayette & Chicago R. R.
Cleveland, Columbus, Cincinnati & Indianapolis R. R.
Chicago, Burlington & Quincy R. R.
Chicago & Northwestern R. W.
Chicago, Danville & Vincennes R. R.
Chicago, Milwaukee & St. Paul R. W.
Cincinnati, Sandusky & Cleveland R. R.
Illinois Central R. R.
Indianapolis, Bloomington & Western R. R.
Indianapolis & St. Louis R. R.
Kansas City, St. Joseph & Council Bluffs R. R.
Lake Shore & Michigan Southern R. R.
Louisville & Nashville & Great Southern R. R.
Louisville, Cincinnati & Lexington R. R.
Louisville, Paducah & Southwestern R. R.
Memphis & Charleston R. R.
Michigan Central R. R.
Missouri Pacific R. R.
Nashville, Chattanooga & St. Louis R. R.
New Orleans & Mobile R. R.
New York Central & Hudson River R. R.
Northern Central R. R.
Paris & Danville R. R.
Pennsylvania R. R.
Pennsylvania Co.
Petersburg R. R.
Piedmont Air Line R. R.
Pittsburgh, Washington & Baltimore R. R.
St. Louis, Alton & Terre Haute R. R.
St. Louis, Iron Mountain & Southern R. R.
St. Louis, Kansas City & Northern R. W.
St. Louis, Vandalia, Terre Haute & Indianapolis R. R.
Toledo, Peoria & Warsaw R. R.
Toledo, Wabash & Western R. W.

Several other railroads from whom no returns have been received up to the time of going to press will doubtless be represented.—*Official Railway Guide.*

General Railroad News.

ELECTIONS AND APPOINTMENTS.

Carbondale & Shawneetown.—At the recent annual meeting the following officers were elected to serve for the ensuing year: Leopold Burkhardt, President, Cincinnati, O.; Beman Gates, Vice-President, Marietta, O.; W. B. Stephenson, Secretary, Cincinnati, O.; D. J. Fallis, Treasurer, Cincinnati, O.; E. C. Dawes, General Manager, Cincinnati, O.; R. J. Cavett, Superintendent, Carbondale, Ill.; J. E. McGittigan, Auditor, General Freight and Ticket Agent, Cincinnati, O. General office of the company, Cincinnati, O.

Southern Central.—At the annual meeting in Auburn, N. Y., Sept. 1, the following directors were unanimously elected: Elmore P. Ross, Thomas C. Platt, William C. Barber, Chauncey L. Rich, Clinton T. Backus, Charles Cady, Robert A. Packer, John N. Knapp, Royal W. Clinton, Charles N. Ross, Dexter H. Marsh, James A. Timpon, James G. Knapp. At a subsequent meeting of the directors, E. P. Ross, Auburn, was chosen President; Thomas C. Platt, Owego, Vice-President; J. N. Knapp, Secretary; C. L. Rich, Treasurer.

Michigan Air Line.—The officers of this company, now in possession of the road known for some time past as the St. Clair & Chicago Air Line, are as follows: J. B. Eaton, President; E. Bancker, Secretary and Attorney; M. A. McNaughton, Treasurer, Jackson, Mich.; Wm. Young, Manager, Valparaiso, Ind. General offices, Jackson, Mich.

Northern Pacific.—The purchasing bondholders met in New York, Sept. 29, and organized the new company by the election of the following directors: Edwin M. Lewis, John N. Hutchinson, Charles H. Wright, Charlesagne Tower, J. Fraley Smith, Philadelphia; J. K. Moorhead, George W. Cass, Joseph Dilworth, Pittsburgh; John M. Dennison, Baltimore; Johnston Livingston, New York; B. F. Cheney, George Stark, Boston; Frederick Billings, Woodstock, Vt. The board subsequently elected Charles B. Wright President; George Stark, Vice-President; Samuel Wilkeson, Secretary; George E. Beebe, Treasurer.

Montclair.—The bondholders, for whose account the road was bought, have organized a new company by the election of the following directors: Smith Ely, Jr., C. L. Perkins, J. de Neufville, Jacob F. Randolph, R. B. Ferris, M. A. Myers, J. Wymann Jones. The board elected Jacob F. Randolph President, and Wm. O. McDowell Secretary.

Panama.—Mr. Philo C. Calhoun has been elected a director, in place of Mr. Emmett resigned.

Canada Central.—At the annual meeting in Ottawa, Can., Sept. 22, the following directors were chosen: H. S. Foster, J. Smith, James Skead, J. Ashworth, H. O. Noel, E. McGillivray, W. Moffat, J. O'Halloran, N. Pettis, H. L. Redhead. Mr. H. L. Redhead was chosen President.

Midland Pacific.—Mr. E. Smith has been appointed General Freight and Ticket Agent. He has been for several years agent for the Chicago, Burlington & Quincy at Nebraska City.

Chesapeake & Ohio.—Mr. Conway R. Howard, who was an engineer on this road during its construction, is now General Passenger and Ticket Agent.

Sheboygan & Fond du Lac.—Mr. M. Ewen has been appointed General Passenger and Ticket Agent, in place of L. A. Emerson, resigned. Mr. M. J. Walsh has been appointed Train Dispatcher; car mileage reports will be made by and to him.

Keilburg & Eastern.—At the annual meeting in Keilburg, Ill., recently, T. B. Calcutt, George Tichen and J. L.

Hornish were chosen directors for three years. The board then elected officers as follows for the ensuing year: J. K. Hornish, President; T. B. Cabeen, Vice-President; J. B. Holland, Secretary.

Waynesboro & Washington.—The officers of this company are as follows: President, J. G. Ritchie, Waynesboro, Pa.; directors, Simon Binehart, Henry Sayres, W. T. Hook, A. A. Purman, W. C. Condit, Henry Swart, Jacob Swart, Ephraim Conger, James Dunn, Thomas James, John Munel; Chief Engineer, O. Barrett, Jr., Allegheny, Pa.

Syracuse, Geneva & Corning.—This new company has been organized by the election of the following directors, D. A. Ogden, Penn Yan, N. Y.; Patrick Lynch, William T. Hamilton, F. N. Hiscock, Syracuse, N. Y.; C. C. B. Walker, S. T. Hayt, Alexander Olcott, A. Gorton, Corning, N. Y.; George J. Magee, Daniel Beach, John Long, Watkins, N. Y.; Edgar Munson, Williamsport, Pa.; Alexander G. Cattell, Camden, N. J.

TRAFFIC AND EARNINGS.

Flour and Grain Movement.

The receipts and shipments for the week ending Sept. 25 are reported as follows, flour in barrels and grain in bushels:

Flour:	1875.	1874.	Inc. or Dec.	P. c.
Lake ports receipts.....	95,658	119,422	Dec.	26.764
" shipments.....	109,739	137,973	Dec.	28.224
Atlantic ports receipts.....	211,083	204,502	Inc.	6.581

Wheat:	1875.	1874.	Inc. or Dec.	P. c.
Lake ports receipts.....	1,957,660	2,008,961	Dec.	51.321
" shipments.....	1,584,203	1,345,132	Inc.	229.071
Atlantic ports receipts.....	1,147,516	1,964,828	Dec.	817.312

Grain of All Kinds:	1875.	1874.	Inc. or Dec.	P. c.
Lake ports receipts.....	4,386,541	4,206,222	Inc.	180.319
" shipments.....	3,684,452	2,593,953	Inc.	1,120.499
Atlantic ports receipts.....	3,586,897	3,638,461	Dec.	41.564

Of the shipments of grain from lake ports, 37 per cent. was by rail in 1875, against 13 per cent. in 1874 and 31 per cent. in 1873.

Baltimore grain receipts for September were as follows:

	1875.	1874.	Inc. or Dec.	P. c.
Flour, barrels.....	133,018	198,450	Dec.	65.432
Wheat, bushels.....	390,538	736,348	Dec.	345.808
Corn.....	920,847	120,025	Inc.	800.822
Oats.....	110,175	87,090	Inc.	23.085
Rye.....	516,812	6,409	Inc.	510.343
Totals.....	2,546,953	1,842,955	Inc.	703.998

In the totals flour is reduced to wheat. The extraordinary increases in rye and corn, as well as the large decrease in flour and wheat, are notable.

The Buffalo Commercial Advertiser reports grain receipts at that port for the nine months ending Sept. 30 as follows:

	1875.	1874.	Inc. or Dec.	P. c.
By lake.....	684,395	35,863,867	951,708	42,172,731
By rail.....	979,400	13,811,130	1,354,592	20,940,129
Totals.....	1,663,795	49,674,997	2,306,300	63,112,860

There is a decrease this year of 27.9 per cent. in flour and of 27.1 per cent. in grain. Of the flour 58.9 per cent., and of the grain 27.8 per cent. came by rail. Shipments for the same period were as follows:

	1875.	1874.	Inc. or Dec.	P. c.
By canal, bushels.....	23,760,272	31,027,178	Dec.	7,266,906
By rail, ".....	10,914,270	8,839,680	Inc.	2,074,590
Totals.....	34,674,542	39,866,858	Dec.	5,192,316

The rail shipments still continue to show an increase, in spite of low canal rates. Rail shipments were 31.5 per cent. of the whole in 1875 and 22.3 per cent. in 1874.

Chicago grain receipts and shipments for the week ending Oct. 2, were, in bushels:

	1875.	1874.	Inc. or Dec.	P. c.
Receipts.....	2,415,157	2,632,325	Dec.	217,168
Shipments.....	2,044,835	1,432,920	Inc.	611,915

The regular through rate for grain by rail from Chicago to New York has long been 30 cents per hundred pounds—18 cents a bushel for wheat and 16.8 cents for corn; and, though the lake rate is but 2½ cents or less per bushel for wheat to Buffalo, and the canal rate from Buffalo to New York 7½ cents or less, the railroads carry a larger proportion than almost ever before.

Coal Movement.

Coal tonnages for the week ending Sept. 25, are reported as follows:

	1875.	1874.	Inc. or Dec.	P. c.
Anthracite.....	548,741	453,196	Inc.	95,545
Bituminous, Broad Top and Clearfield.....	20,069	.....	.....	.....
Cumberland.....	27,062	.....	.....	.....
Bituminous, Barclay.....	7,995	.....	.....	.....
" West'n Pennsylvania.....	20,855	.....	.....	.....
" West Virginia.....	4,692	.....	.....	.....
Pennsylvania & Westmoreland gas coal.....	17,836	.....	.....	.....
Oke, Western Pennsylvania.....	15,282	.....	.....	.....

The total production of Cumberland coal reported from the period from Jan. 1 to Sept. 25, is as follows: 1875, 1,705,446; 1874, 1,764,942; decrease, 59,496 tons, or 3.37 per cent.

Erie Canal Traffic.

Business at Buffalo from the opening up to Oct. 1, was as follows:

	1875.	1874.	Decrease.	P. c.
Receipts of tolls.....	\$547,523 09	\$937,496 84	\$389,973 75	41.5
Number of boats cleared.....	4,466	5,804	1,338	23.1

The canal opened for traffic May 18, 1875, and May 5, 1874.

Railroad Earnings.

Earnings for various periods have been reported by the following companies:

Nine months ending Sept. 30:	1875.	1874.	Inc. or Dec.	P. c.
St. Louis, Kansas City & Northern.....	\$1,880,843	\$1,805,778	Inc.	\$75,065
St. Louis, Iron Mt. & So.....	2,488,694	2,199,204	Inc.	289,490

Month of September:	1875.	1874.	Inc. or Dec.	P. c.
St. Louis, Kansas City & Northern.....	\$249,624	\$249,733	Dec.	\$1,109
St. Louis, Iron Mt. & So.....	342,800	292,216	Inc.	50,584

Second week in September:	1875.	1874.	Inc. or Dec.	P. c.
St. Louis, Kansas City & Northern.....	\$6,780	.....	.....	.....
Indianapolis, Bloomington & Western.....	33,127	\$33,811	Dec.	\$684
Kansas Pacific.....	72,098	64,599	Inc.	7,499
Missouri, Kansas & Texas.....	69,805	76,164	Dec.	6,359

Third week in September:	1875.	1874.	Inc. or Dec.	P. c.
St. Louis, Iron Mt. & So.....	\$90,200	\$65,534	Inc.	\$24,666

PERSONAL.

—The current number of *Harper's Weekly* has the following personal: "In one of the bright New York letters to the Boston *Gazette* mention is made of Mr. A. R. Macdonough, Secretary of the Erie Railway Company, as 'the lawyer critic, so perfect as a scholar and so modest that he has often been compared to Thackeray's Warrington.' He is a son of the late distinguished Commodore Macdonough, President of the St. Nicholas Society, Secretary of the Century Club, and perhaps

its most beloved member. He was the classmate of Brister, and held by the latter to be the first lay scholar in America—a lawyer by profession, a poet and critic. He writes the best reviews in serial papers and magazines, and translated Papillon's remarkable papers for the *Popular Science Monthly*."

—Dr. W. J. Hawkins, the retiring President of the Raleigh & Gaston and the Raleigh & Augusta Air Line companies, has been presented by the employees of those companies with a silver service costing \$650.

—Mr. George Macnoe, who recently resigned his position as Paymaster of the Buffalo, New York & Philadelphia road, was presented with a valuable silver set by the officers and employees of the road in Buffalo, Sept. 25.

—Mr. T. B. Sargent, having resigned his position as Superintendent of the Bay City and Mackinaw Divisions of the Michigan Central road, was met at the depot in Detroit, Oct. 1, by a committee of the employees of those divisions and presented with a valuable silver service of 18 pieces, as a testimonial of their esteem for him and their regret at his departure.

—Mr. Charles F. Hatch, formerly well known in connection with the Lake Shore & Michigan Southern road, and for several years past General Manager of the Eastern Railroad, for part of the time of the Maine Central also, has resigned his position. There has lately been some opposition to Mr. Hatch among the stockholders, who have received no dividends for several years and who are inclined to blame the management without reason. Mr. Hatch will reside in New York for a time.

—At the annual meeting of the Louisville & Nashville Company this week, Mr. Thomas J. Martin retired from the presidency. It was reported that he will probably be succeeded by Mr. E. D. Standiford, now Vice-President.

—Gen. Ira Spaulding, a well-known engineer, died suddenly of heart disease Oct. 2, while on his way eastward from Harrisburg, Pa., in a train on the Reading road. He was born in Oneida County, N. Y., in 1818 and began his engineering work on the Syracuse & Utica road in 1839. He was subsequently on the Erie and then on the Great Western of Canada. He served through the war in an engineer regiment, leaving it as Colonel, and was made Chief Engineer of the Utica, Chenango & Susquehanna Valley road. He has also been connected recently with the Costa Rica Railroad and the Northern Pacific.

THE SCRAP HEAP.

Railroad Manufactures.

The Pennsylvania Steel Company's rail mill at Baldwin, Pa., is running full double turn and is now making rails for the Central Pacific. The company has also on hand orders for the Pennsylvania Railroad, the Philadelphia, Wilmington & Baltimore, the Central of New Jersey, the Philadelphia & Erie, the Northern Central, the Atlantic, Mississippi & Ohio, the Catawqua & Foggelsville, and the Philadelphia & Reading, besides some for street rails.

It is said that the Woodstock Iron Company, of Georgia, has begun the manufacture of spiegeleisen from ores found upon its property. If the company is successful this will be the first spiegeleisen made from native ores, that now manufactured in this country being from Spanish ore.

The Jagger Iron Company, of Albany, N. Y., has failed, the causes being the depreciation of the value of iron, of which a large stock was on hand, and the losses occasioned by long contracts for ore at a high price. The debts of the concern amount to about \$225,000, of which \$50,000 is secured by a first mortgage to the National Savings Bank of Albany, and \$88,000 by a second mortgage to the Pennsylvania Coal Company.

The Barney & Smith Manufacturing Company.

An officer of this company informs us that they have had no cause to complain of dull times, the works having had all they could do through the Spring and Summer. They have just completed 500 grain cars for the St. Louis, Kansas City & Northern, are now building a lot of stock cars for the Chicago, Milwaukee & St. Paul, and have orders for 100 cars for the Boston & New York Air Line. They have contracts to equip four narrow-gauge roads with passenger and freight cars. They are building six sleeping coaches for the Wagner Company, to be used in their new line over the Michigan Central. The contract for these sleepers was for a 60 days' delivery. They are first-class cars in every respect.

British Rail Exports.

The exports of railroad iron of all kinds reported by the Board of Trade were, in tons:

Month of August:	1875.	1874.	Inc. or Dec.	P. c.
Total.....	61,078	71,032	Dec.	9,954
To United States.....	1,341	64	Inc.	1,277

Jan 1 to Aug. 31:

	1875.	1874.	Inc. or Dec.	P. c.
Total.....	251,986	576,196	Dec.	184,210
To United States.....	4,629	11,106	Dec.	6,477

The average price reported for the exports to this country is £20½ in August, 1874, and a trifle more than £20 this year; and for the eight months, £13 2s. last year, and £9 12s. this. This indicates that the importations were chiefly steel last year and chiefly iron this.

OLD AND NEW ROADS.

St. Paul & Pacific.

The plan of an agreement between the bondholders committee and the company was to be submitted to the bondholders for their action at a meeting in Amsterdam, Oct. 4.

This agreement between the company and the bondholders' committee is very voluminous; the substance of it is as follows: There are to be executed a mortgage on the branch line (not including the lands) for \$1,368,000 7 per cent. gold bonds, having 30 years to run; a mortgage on the main line for \$600,000 similar bonds, and a second mortgage on the main line for \$2,200,000 7 per cent. currency bonds, the holders of which are to accept in full payment of interest such *pro rata* share of the net earnings as may remain after paying the interest on the first mortgage; provided that if after ten years they do not receive 3½ per cent. annually, the principal shall be held to be due. Preferred stock shall also be issued on both the main and branch lines, and land scrip, which shall bear no interest, but to the payment of which all the proceeds of land sales shall be applied.

Of the \$1,368,000 Branch Line bonds, \$486,000 shall be reserved to retire the existing bonds on said line and as much as necessary shall be used to exchange for 50 per cent. of the \$1,200,000 issue; the rest may be sold to pay for improvements and new equipments, payment of debts and expenses of the bondholders' committee. The other 50 per cent. of the \$1,200,000 issue shall be paid in land scrip. The holders of the \$2,800,000 issue of Branch Line bonds are to receive one-half their face in land scrip and one-half in preferred stock. Overdue coupons on both issues to be paid either in preferred stock at par, or one-half in preferred stock at par and one-half in common stock at 50.

The new issue of \$600,000 first-mortgage Main Line bonds shall be sold for cash to be used for improvements, equipment and payment of debts. The holders of the \$3,000,000 Main Line issue of 1874 and the \$6,000,000 issue of 1868 shall receive 25 per cent. in the new second-mortgage bonds, 50 per cent. in land scrip and 25 per cent. in preferred stock. The holders of the \$1,000,000 issue of 1870 shall receive 50 per cent. in land scrip, 25 per cent. in preferred stock and 25 per cent. either in second preferred stock or a second-class land scrip, overdue

coupons of all these issues to be paid 50 per cent. in land scrip and 50 per cent. either in second preferred or common stock. The common stock to be limited to \$5,000,000 for the Main Line and \$1,500,000 for the Branch Line, and in case the new issue is not enough to carry out the agreement, the holders of the present stock must contribute enough to make up the amount required.

The company is to establish transfer offices in New York and Amsterdam. The net earnings to be divided semi-annually, except that 10 per cent. may be retained as a fund for improvements in road and equipment. Five trustees to be appointed to carry out the agreement, who are to be George S. Coe, John S. Barnes, Edwin C. Litchfield and two others to be named by the committee. The old bonds to be deposited with the United States Trust Company, of New York, the Union Bank, of London, or the Associate Cassa, of Amsterdam, subject to the order of the trustees, who shall have authority to use them to foreclose in case it shall be necessary to carry out the agreement. The agreement to be finally binding if the holders of 90 per cent. of the bonds shall assent. In case, however, that 90 per cent. of the bonds do not agree within one year, either party may rescind the agreement.

The holders of the new bonds are to have one vote for each \$100 of their holdings; holders of land scrip to have one vote for each \$100 on all questions affecting the management of the land grant.

The rest of the long document is taken up with minor details respecting the exchange of bonds, etc.

Meetings.

The following companies will hold their annual meetings at the times and places given:

Louisville & Nashville, in Louisville, Ky., Oct. 6.

Western Maryland, at the office, corner Eutaw and Fayette streets, Baltimore, Oct. 20, at 12 noon.

Southern, of Long Island, at the office, No. 11 Mercer street, New York, Oct. 16, at 12 noon.

Toledo, Wabash & Western.

An informal meeting of stockholders to decide upon action to be taken at the annual meeting was held in New York, Sept. 30. Stockholders representing 35,950 shares were present, and resolutions were adopted appointing a committee of five to take charge of the stockholders' interests, and to take such measures as may be necessary to resist the threatened foreclosure of the second consolidated mortgage. Stockholders were urged to send their proxies to the members of the committee, and it was resolved to pay an assessment of 10 cents per share to meet the necessary expenses. The committee consists of O. D. Ashley, A. S. Peabody, H. S. Henry, J. A. Jameson and E. A. Corey.

Dividends.

Dividends have been declared by the following companies:

Pittsburgh, Fort Wayne & Chicago, 1½ per cent., quarterly, on the special guaranteed stock, payable Oct. 1. Also 1½ per cent., quarterly, on the regular guaranteed stock, payable Oct. 5.

Philadelphia & Reading, 2½ per cent., quarterly, payable Oct. 29.

Panama, 3 per cent., quarterly, payable Oct. 15.

Lehigh Valley, 2½ per cent., quarterly, payable Oct. 15.

Ogdensburg & Lake Champlain, 4 per cent., semi-annual, on the preferred stock, payable Oct. 1.

Sioux City & Pacific, 3½ per cent., semi-annual, on the preferred stock, payable Oct. 1.

Vermont & Massachusetts (Fitchburg Company lessee), 2 per cent., semi-annual, payable Oct. 7.

New York, Providence & Boston, 2½ per cent., quarterly, payable Oct. 11.

Eastern.

At the directors' meeting last week the committee appointed to prepare a statement of the company's affairs presented its report. The statement was discussed and was to be given to the public this week. Mr. Charles F. Hatch presented his resignation as General Manager, which was accepted and the office abolished. It was decided to discontinue the Washington street office in Boston, to do away with free passes and with the system of rebates on freight.

It is understood that the company and the Boston & Maine also will withdraw from the competition for Western freight to and from Boston, in connection with the Grand Trunk.

Cincinnati, Wabash & Michigan.

The extension of this road from last year's terminus at Marion, Ind., southward to Anderson, is now completed as far as Fairmount, 12 miles from Marion and 93 miles from the northern end of the road at Goshen. Trains are running to Fairmount regularly.

New York & Canada.

Track laying is in progress all along the unfinished portions of the line and is so nearly completed that the Managers expect to run a train through from White Hall to Bouse's Point about Oct. 20. Much of the ballasting and unfinished work is yet to be done, however, and it is not likely that regular through trains will begin to run much before Jan. 1, 1876.

Midland Pacific.

In addition to the 83 miles of road from Nebraska City, Neb., westward to Seward, this company now has completed and in operation a line from Nebraska City south by east, following the general course of the Missouri and on its western bank, to Brownville, 23 miles. Work is in progress on the extension of this line from Brownville nearly due south about 23 miles to the Atchison & Nebraska at Salem.

Annibal & St. Joseph.

Two clerks in the employ of the company have been arrested for defrauding it of a considerable amount in a way which is thus described by the *Hannibal Courier*: "Some time ago General Ticket Agent Penfield, of the Hannibal & St. Joe, noticed that among the tickets returned to his office were quite a number with a small bit torn out of the end or side. The frequency of this peculiarity among the tickets returned by conductors aroused his suspicions, and Detective McGraw, of Quincy, was employed to work the case and see what there was in it. The detective called to his aid Marshal Kelly, of this city, who went to work carefully and quietly, and on Saturday their joint labors resulted in the capture of the guilty parties and exposing the whole plan."

The guilty parties are H. Livingston, clerk in the office of the General Ticket Agent, and Wm. E. Davis, a clerk in one of the railroad offices in Kansas City, but for several years a clerk at the Hannibal & St. Joe headquarters in this city. Livingston had the handling of the tickets which came into the office, and whenever he found one which the conductor had punched near the edge he would lay it to one side. At a convenient time the tickets so selected were neatly and delicately torn so as to deface the punch mark and then forwarded to Davis at Kansas City, to be disposed of for the benefit of the firm."

New York, Boston & Montreal.

The Farmers' Loan & Trust Company, trustee, has begun suit to foreclose a first mortgage upon the New York & Boston road, which was executed in 1870, the company having been since merged in the New York, Boston & Montreal by consolidation. The mortgage was for \$2,500,000, and bonds to the amount of \$1,300,000 were issued, besides \$750,000 more which are in dispute. The application is opposed by the trustees under the New York, Boston & Montreal mortgages,

who claim that the old bondholders, or a majority of them, agreed to give up their bonds for those issued under the consolidated mortgages; that at the time of consolidation the New York & Boston road was in an unfinished state, right of way not paid for and the station houses not built. The trustees allege that the consolidated company expended \$643,000 for right of way and road-bed and \$267,000 for superstructure. As to the right of way, they claim a prior lien and for the other expenditures an equal lien with the old mortgage. The case has been given to a referee to take testimony.

The section of 10 miles from High Bridge, New York, north to North Yonkers, which has been leased from the Receiver by Mr. John Q. Hoyt, was formally opened by an excursion Oct. 4. Regular trains will begin to run Oct. 11.

Springfield, Jackson & Pomeroy.

This company advertises for proposals for the grading, masonry, bridges, ties, iron, tracklaying and ballasting of its road from Springfield in Clark County, Ohio, to Jackson in Jackson County. Profiles, specifications, etc., can be seen and all information obtained from the Chief Engineer, W. C. Agnew, at his office in Waverly, Clark County, Ohio. Bids will be received up to Oct. 21 by the President, James Emmitt, also at Waverly, Clark County, Ohio.

Cincinnati, Rockport & Southwestern.

This company has finally secured the money necessary to complete the road from the present terminus at Ferdinand, Ind., to Jasper. The contract for the grading, ties and tracklaying has been let to Douglas & Doty, of Columbus, O.

Baltimore & Ohio.

The improvements at the wharves at Locust Point, Baltimore, are being pushed forward, and the new coffee storehouse is nearly completed.

There has been a general reduction in the working force all along the line. About 400 men have been discharged from the Mount Clare shops, and the number of employees on the road and at the other shops has been reduced about one-fifth.

The arguments in the suit before the United States District Court involving the title to the Harper's Ferry property have been closed. The Court reserved its decision, which will probably be announced at the next term, in November.

New Mail Routes.

An extension of mail service, to begin Oct. 15, has been ordered over the new section of the Raleigh & Augusta Air Line, from Sanford, N. C., to Cameron, 13 miles.

Extension of mail service has been ordered over the Cincinnati, Wabash & Michigan road, from Marion, Ind., to Fairmount, 12 miles, to begin Oct. 6.

Chesapeake & Ohio.

Bills of foreclosure of the first mortgage have been filed simultaneously in the United States Circuit Courts for Virginia and West Virginia. The court at Richmond issued the usual preliminary injunction against interference with the mortgaged premises, and also a preliminary order granting application for a receiver.

It is reported that this suit for foreclosure has been begun under an agreement, by which the property will be bought in by the bondholders and a new company organized, in which all the interests concerned will be represented. It is hoped that the new corporation will be strong enough to secure the immediate completion of the rail connections with Louisville and Cincinnati. It has been apparent for some time, that at the funding arrangement could not be carried out, and that a foreclosure and reorganization would be necessary.

Ohio & Mississippi.

Mr. Allan Campbell, surviving trustee, gives notice that a meeting of the holders of the first consolidated mortgage bonds will be held at his office, No. 71 Broadway, New York, Jan. 7, 1876, at 12 noon, for the purpose of electing a trustee under the mortgage in place of Samuel U. F. Odell, deceased. At the same time and place a meeting of holders of the second consolidated mortgage bonds to choose a trustee under that mortgage, also, in place of Mr. Odell.

Chicago, Milwaukee & St. Paul.

The Farmers' Loan & Trust Company, trustee, will receive proposals at its office in New York, up to noon of Oct. 23, for the sale and delivery on Oct. 30, of 100 second-mortgage bonds of the Milwaukee & St. Paul Company, of \$1,000 each, on account of the sinking fund, as provided in the mortgage. The proposals will be opened Oct. 25, and due notice of the award will be sent by mail.

European & North American.

The following statement of the bonded debt has been published:

1. An issue of \$280,000 6 per cent. currency bonds, dated Aug. 1, 1863. Of this issue all but \$19,000 have been called in and cancelled. All the coupons have been paid.

2. An issue of \$1,000,000 5 per cent. currency bonds, dated Jan. 1, 1869, made by the City of Bangor and secured by first mortgage on the road from Bangor to Winn, 56 miles. Coupons paid up to and including Jan. 1, 1875.

3. An issue of \$2,000,000 6 per cent. gold bonds, secured by a first mortgage on road from Winn to the St. Croix River, 58 miles, and on the Maine land grant, and a second mortgage on the road from Bangor to Winn. Of these bonds \$1,986,000 have been sold and \$14,000 hypothecated. The coupons have been paid up to and including March 1, 1875.

4. An issue of \$2,000,000 6 per cent. sterling bonds, made by the New Brunswick Company and secured by a first mortgage on the road from the St. Croix River to St. John, 91 miles. These bonds are held in England, \$1,760,000 having been sold and the rest pledged as collateral. Coupons are paid up to and including Jan. 1, 1875.

5. After the consolidation of the Maine and New Brunswick companies, a consolidated mortgage was made to secure \$6,000,000 6 per cent. gold bonds, of which \$5,000,000 were to be exchanged for outstanding bonds of the two companies, and \$1,000,000 issued as required. No bonds have been exchanged, but of the \$1,000,000 to be issued, \$6,000 have been sold and \$934,000 pledged as collateral.

The bonded debt of the Bangor & Piscataquis Division consists of \$814,000 Bangor City bonds, secured by first mortgage on the road, \$600,000 being 6 per cent., and \$214,000 7 per cent. currency bonds. All coupons are paid up to and including April 1, 1875.

There is also an issue of \$200,000 7 per cent. gold bonds, all of which are held as collateral for a loan of \$100,000. No interest is in default. This makes the total funded debt of the main line \$6,019,000 (\$29,361 per mile), of which \$1,248,000 are hypothecated, and of the Bangor & Piscataquis, \$1,014,000 (\$18,436 per mile), of which \$200,000 are hypothecated.

At a meeting of the creditors in Bangor, Me., Oct. 5, the committee appointed at the previous meeting submitted its report. The total indebtedness is placed at \$7,372,704.95 and the net earnings for 1874 were \$334,830, or about 4½ per cent. on the debt. The sale of lands and other property of the company will, it is estimated, realize about \$500,000, which can be used in reducing the debt. The consent of the stockholders has been obtained to the committee's plan, which, as noted last week, includes the transfer of the stock to trustees for the benefit of the creditors, the funding of one-half of the coupons on the bonds for three years, the extension of the floating debt for six years and the application of all net earnings after paying for necessary repairs and improvements, to the reduction of the floating debt. In case certain specified debts are not paid

within four years the stock will become the absolute property of the creditors. The report is agreed to by the committee of creditors, the trustees, and the committee of the International Railroad Construction & Transportation Company. The meeting accepted the report with some slight modifications.

A meeting of the bondholders will be held Oct. 19 to act on the proposition made to them.

Pennsylvania-New York Division.

A conference was recently held between officers of the company and a committee of the City Council of Jersey City with reference to raising the tracks through that city. A plan was presented and discussed which provided for an elevated road from the east end of Bergen Cut to a point near the depot and the closing of two streets adjoining the depot, the estimated cost being \$600,000. It was finally agreed that the city should appoint a competent engineer to consult with the railroad engineer, and these two should draw up a complete plan, to be ready by the latter end of October, when another conference will be held.

Railroads in the New Jersey Constitution.

A number of amendments to the Constitution of New Jersey have recently been adopted by vote of the people of that State, several of which have reference to railroads. One of these forbids any county, city, town or other municipality to make any gift, grant or loan of money, property or credit to any corporation. Another prohibits the Legislature from passing any special charter or granting any special privilege to any railroad or other corporation, and requires the Legislature to pass general laws regulating the formation of railroad and manufacturing companies; this insures the permanence of the present general railroad law, or one similar to it. Another amendment which will probably affect railroad property forbids the passage of any special tax laws, and provides that property shall be taxed only under general laws.

Indianapolis, Bloomington & Western.

A meeting of bondholders was held in New York, Sept. 30, at which a report was presented by Mr. H. Vernam from the committee appointed some time ago. The report stated that the bonded debt now consists of first-mortgage bonds with unpaid coupons, \$3,500,000; Danville, Urbana, Bloomington & Pekin bonds, with unpaid coupons, \$2,000,000; Western Extension bonds, with unpaid coupons, \$3,285,000; second-mortgage bonds with unpaid coupons, \$1,500,000. In addition to the bonded debt, the floating debt was stated as upward of \$3,500,000, against which \$2,215,000 of the Extension bonds are hypothecated, making a total indebtedness of \$13,285,000, with a possible addition of \$2,215,000. The rolling stock, badly out of repair, consists of 45 engines, and 28 others unpaid for and claimed by the Rogers Locomotive Works, 337 box freight cars, 280 coal and flat cars, 50 stock cars, 10 baggage cars, 3 baggage and smoking cars, 2 postal cars, and 27 baggage cars. There are also on the road 1,175 box freight cars owned by the Western Car Company, for which the road pays a rental from Sept. 1, 1874, to Jan. 1, 1876, of \$10 per month each, and has to keep them in repair. There is a chattel mortgage to secure the floating indebtedness on all the rolling stock, furniture, equipments, buildings, and income of the company, and one of its clauses provides that, unless the \$3,000,000 be paid within two years from Nov. 16, 1874, the whole shall be forfeited and sold to pay the floating debt. In Illinois it is believed that this chattel mortgage bars any rights of the real estate mortgage bondholders in the personal property of the company. The Receiver was ordered by the court appointing him to pay out of the first earnings of the company the back pay-rolls amounting to \$285,000 and all bills for supplies furnished since July 1, 1874, but he has been able to pay off only \$30,000 of the pay-rolls, there having been no greater surplus. The Receiver has issued \$212,000 of certificates to cover the purchase of iron and the payment of unpaid rights of way. These certificates are claimed to be a lien on the income and property of the company ahead of all the mortgage bonds, but do not cover the extension and branch. It is probable that \$350,000 of further certificates will be issued to reduce the grades on the road, a measure recommended by the Receiver in his last report. Turner Brothers have commenced an action to have their debt, amounting to about \$1,000,000, declared a first lien on the road prior to the mortgages, and the holders of the bonds of the original road have also commenced an action to foreclose their lien. Other suits are also pending which require immediate action on the part of the first mortgage bondholders to protect their rights. The Trustees of these bonds have filed a cross bill in the action for foreclosure taken by the second-mortgage bondholders, but require instructions from a majority of their clients before proceeding further. The road and equipment are in poor condition, and \$350,000 is required to repair them properly. It runs through a rich country, but has great competition to contend against. Still the committee are of opinion that it can be made to pay interest on a reasonable cost. Mr. Vernam also read from the Receiver's report and from the Auditor's report in confirmation of these statements, and advised the first mortgage bondholders present to authorize the Trustees to proceed with a foreclosure.

A very sharp debate then sprung up and it soon appeared that, although the call had been issued to first-mortgage bondholders, a number of the second-mortgage holders were also present, and they, with a portion of the first-mortgage bondholders who were opposed to the objects of the party calling the meeting, were in a majority. At length the callers of the meeting gave up in despair, and the opposition accepted the resignation of Mr. Wyckoff, of the old committee, and elected Mr. T. J. Van Wyck in his stead, after which they adjourned. The callers of the meeting at once reassembled, and elected Mr. Kingsley Chairman and Mr. McDowell Secretary. Mr. Vernam said that the English and German first-mortgage bondholders had promised to send on names to represent them on the proposed committee. Messrs. Earl P. Mason, of Providence, R. I.; L. H. Alden, of Passaic, N. J.; F. W. Peck, of Chicago, Ill., and J. Wyman Jones and Remington Vernam, of New York, were unanimously chosen a committee to represent the first-mortgage bondholders, to devise a plan of reorganization and to report, the understanding being that the English and German representatives shall be added as soon as their names arrive. It was stated that these five gentlemen represent 683 bonds, and that their election was not in a spirit of opposition to the other bondholders and their proceedings, but merely to guard the interests of the first-mortgage bondholders. The meeting then adjourned.

Belleville & Carondelet.

This company, which proposed some years ago to build a railroad from Belleville, Ill., to East Carondelet, mainly for the purpose of carrying coal to the iron works at Carondelet, has been revived, and there is talk of beginning work soon.

Illinois Central.

This company now runs through cars from Chicago to Springfield and Peoria by way of Gilman and the Gilman, Clinton & Springfield and the Toledo, Peoria & Warsaw roads. Two trains are run daily each way.

Waynesburg & Washington.

It is now expected that the grading of this road will be completed by Nov. 1, and unless the weather is unusually unfavorable the track will be laid and trains running in December. The road, which is of three-foot gauge, is to run from Washington, Pa., southward through a rich and well settled agricultural country to Waynesburg, a distance of 28 miles. The

stock has almost all been taken by the people along the line who have also, in most cases, given the right of way and furnished ties at very low prices. The road is being cheaply built, is laid with 30-pound iron, and will cost only about \$6,500 per mile, with an equipment sufficient for its present needs. There is already talk of branches or extensions from Waynesburg south to Blacksville and also to Carmichael's. The country on the line is entirely destitute of railroad facilities.

Sharon.

The grading of this new road from Sharon, Pa., to Transfer is completed from Sharon as far as Shady Side, and the work of laying the track has been begun.

Syracuse, Geneva & Corning.

The Fall Brook Coal Company, which recently obtained control of the old Corning & Susquehanna Bay Company, has organized a new corporation under the name of the Syracuse, Geneva & Corning Railroad Company, for the purpose of completing the road. The road will run from Corning, N. Y., northward by way of Savona, and up the west side of Crooked Lake to Penn Yan, and thence to Geneva, a distance of nearly 60 miles. It will be an extension of the Corning, Cowanesque & Antwerp road, which is worked by the Fall Brook Company, and will give a new outlet to that road, which has heretofore been dependent upon the Erie.

Kalamazoo, Lowell & Northern Michigan.

The officers report that contracts have been let for grading all but two miles of the road between Kalamazoo and Hastings, and all but 7½ miles of that between Hastings and Lowell. The estimated cost of completing the sections let is \$22,948; for grading 9½ miles not yet let, \$26,722; bridges and culverts, \$24,250; ties, \$23,204; right of way not yet secured, \$3,500; sundries, \$12,066; total, \$112,690. The cost of the work done up to Aug. 1 was \$62,338.38, and the good subscriptions and donations on hand \$120,661.62. Of these, however, \$26,000 are not available until the road is finished. An effort is to be made to raise \$18,000 by subscriptions to the stock, and donations of ties and timber along the line.

Kansas City Union Depot.

A meeting of the superintendents and managers of the lines interested was held in Kansas City, Mo., Sept. 23, to decide on the question of rebuilding the depot recently burned. It is said that they agreed to build a fine depot, to cost about \$200,000. A committee of five was appointed to take control of the matter, select the location, etc. The committee consists of George H. Nettleton, W. R. Arthur, Ford Barnard and Charles N. Lee. It is thought that a new site will be chosen not far from the old one.

Philadelphia & Reading.

Over 450 men have been discharged from the shops at Reading, Pa., and the shops are to run with the reduced force for several months. Several train crews have been laid off, and there has been a general reduction in the number of employees.

Galveston, Houston & Henderson.

The late severe storm at Galveston did serious injury to this road. On Galveston Island the road-bed was very badly washed, and besides the breaks in the bridge over the bay the road-bed was washed away for several miles west from Virginia Point, the ties and rails being carried off the road-bed entirely in many places. There were other small breaks, and though a force of 500 men was set at work, traffic was not resumed until Oct. 4.

Galveston, Harrisburg & San Antonio.

This road suffered considerably from the late storm in Texas. For 18 miles, from East Bernard to Richmond, the track was almost entirely washed away, requiring a great deal of labor to restore it. One span of the bridge over the Brazos River at Richmond was carried away, and all traffic stopped for nearly two weeks.

New Jersey Midland.

A meeting of the bondholders has been called by the committee and was to be held at No. 160 Fulton street, New York, Oct. 7, at 1 p. m. The object of the meeting was to consider a plan of reorganization prepared by the committee, which is, briefly, as follows:

1. The road to be sold under foreclosure of the first mortgage and a new company organized.
2. The receivers' certificates to be provided for either by paying them gradually from the net earnings or by the issue of short-time bonds under a provisional mortgage. Their estimated amount is from \$350,000 to \$500,000.
3. A first mortgage to secure \$3,000,000 in 7 per cent. bonds to be issued to the present first-mortgage bondholders, the coupons for three years to be funded.
4. First preferred stock to the amount of \$1,200,000 to be issued for the overdue and funded first-mortgage coupons on the basis of \$1,400 stock for \$1,000 coupons.
5. Second preferred stock to the amount of \$1,500,000 to be issued in exchange for the present second-mortgage bonds.
6. Common stock to the amount of \$600,000 to be issued to the floating-debt creditors.
7. The rest of the common stock, not to exceed \$700,000, to be divided *pro rata* among the holders of the present common stock.

This will give the company stock at the rate of \$66,338 and bonds at the rate \$42,252 per mile owned, with an annual interest charge of \$210,000, or nearly \$3,000 per mile. To pay this will take probably gross earnings of \$10,000 per mile.

Northern Pacific.

At the call of the Purchasing Committee, the bondholders who have joined in the agreement for the re-organization of the company met in New York, Sept. 25. It was estimated that about \$15,000,000 of the bonds were represented. The Purchasing Committee submitted a report, which stated that the mortgage was foreclosed on April 16 last in the United States Circuit Court, and a receiver appointed; and, in conformity to subsequent decrees of the Court, all the property of the company, except the patented and certified lands, with all the rights, liberties and franchises, including the franchise to be a corporation, was put up at public auction on Aug. 12 last, and purchased by them for \$100,000; that on Aug. 28 the sale was confirmed by the Court; that the preparation of the deeds and papers incident thereto had been prepared with great care, under the advice of counsel, and just completed; that they had this day come into full possession of the property so purchased, and proposed to place it immediately under the control and management of the directors about to be elected. The patented and certified lands, all in Minnesota and Dakota, the sale of which awaits the order of the court. The decree for their sale provides for the payment of 5 per cent. of the purchase money in cash, and that the balance may be paid in first mortgage bonds of the company. For the purpose of securing to the bondholders in general the full benefit of the entire property of the company, under the foreclosure, the committee has caused the surrendered bonds to remain in the hands of the Farmers' Loan and Trust Company, subject to the control of the committee, for such future use as the interest of the bondholders may demand. In compliance with the call issued Aug. 12 last, bonds have been deposited with the Farmers' Loan and Trust Company for exchange into preferred stock, and for otherwise carrying out the objects of the plan of reorganization, amounting to this date to about \$20,000,000. Large addi-

tions are daily being made and the committee expect that nearly all will eventually come in. The report says, in conclusion: "You have now 550 miles of road in paying operation, substantially free from debt, and an attaching domain of nearly 10,000,000 acres of land. With this immense extent of unencumbered property as a basis for future operations, and the 25,000 and odd acres to be added for every mile of new road to be built—there ought to be little doubt of your ability to secure means for the early resumption of work in the extension and completion of the road."

A communication from the Receiver, General Cass, was submitted, giving an account of his management of the road. During his administration as Receiver the earnings had been sufficient to pay all expenses and leave a balance of \$17,000.

Notice was given by the attorneys for F. Carroll Brewster, a bondholder, that on his petition the United States Circuit Court, at Hartford, Conn., had granted an order to show cause why the foreclosure proceedings should not be set aside. This order was to be heard this week.

The bondholders, after adopting the usual by-laws, proceeded to organize the corporation by the election of thirteen directors. The persons chosen are nearly all representatives of the party which started the road in the first place and has since built and managed it, and has also had the management of the foreclosure and reorganization. The board subsequently elected the usual officers, Mr. Charles B. Wright, of Philadelphia, being President. It is said that Mr. Wright has only accepted the position pending certain negotiations for money, and that he will probably retire before long.

Buffalo & Jamestown.

The track is now laid to the southern terminus at Jamestown, N. Y., three miles beyond the point last noted and 69 miles southward from Buffalo. Regular trains, which now run to Kennedy, 60 miles from Buffalo, will soon be extended to Jamestown, and there will probably be a formal opening of the line. The Atlantic & Great Western depot at Jamestown will probably be used by both companies.

The road just completed was begun some three years ago and was intended to form a new and direct line from Buffalo to Titusville, Pa. The Oil Producers' Railroad Company, which was formed to build the Pennsylvania end of the line, abandoned the enterprise without doing any work and was subsequently dissolved. In spite of this partial failure of the plan, however, the Buffalo & Jamestown Company, having received large subscriptions from Buffalo and the towns along the line, resolved to complete its road, relying for traffic upon the local business and the connection with the Atlantic & Great Western at Jamestown.

Michigan Air Line.

This company has resumed possession of the line from Ridgeway, Mich., to Romeo, 16 miles, which has for some years past been known as the St. Clair & Chicago Air Line, and which was recently sold at Sheriff's sale.

Huron & Quebec.

The town of Peterboro, Ont., has voted to grant a bonus of \$150,000 to this company.

Great Western Telegraph.

Mr. O. H. Horton, Receiver, has filed a report with the court. He says the lines are in fair working order, the total receipts since October, 1874, being \$33,436.02, and the total expenses \$32,156.27. The Western Union Company, to which the greater part of the lines are leased, claims about \$10,000 from the company on various accounts, and there are other accounts against the company, bringing the total amount up to about \$23,500. The Receiver states that the leases with the Western Union Company expire in January next, and advises that the whole lines of the company be sold to pay its debts.

New Martinsville & Mannington.

The people of Wetzel County, W. Va., have voted to subscribe \$41,000 in aid of a narrow-gauge railroad from the Ohio River at New Martinsville westward up the valley of Fishing Creek to the Baltimore & Ohio at Mannington. The distance is about 30 miles. The work will, it is said, be very light. Proposals have been made, it is said, to build and equip the road for \$60,000 per mile. It will pass through a secluded region, heretofore almost entirely destitute of transportation facilities.

Chicago, Clinton & Western.

In the Davenport (Ia.) District Court, Sept. 30, two mechanics' liens were filed against the Chicago, Clinton & Western Railroad and F. E. Hinckley, contractor—one by Wallbaum, Bridges & Co., sub-contractors, claiming some \$50,000 for building the road west of Clinton; and the other by Downey & Wright, for \$6,000, for work done on the line of road. It appears that the sub-contractors have thus far received only \$12,000 in money.

Stockton & Copperopolis.

The negotiations with the bondholders have been completed and the exchange of bonds made. As heretofore stated, the terms were that for their \$1,000,000 of 8 per cent. bonds, the principal of which is past due, the bondholders agree to take \$600,000 of new 5 per cent. bonds having 30 years to run, principal and interest guaranteed by the Central Pacific Company.

California Pacific.

The Commercial and Financial Chronicle says: "Negotiations are on foot between the holders of the extension bonds of this company and the present officers of the company, which represent several of the large proprietors in the Central Pacific Company. The committee representing the German bondholders have accepted the terms offered by the railroad company—viz., to exchange \$3,500,000 of the old bonds, with the unpaid interest thereon, amounting to over \$400,000, for a new issue of \$2,000,000 6 per cent. bonds of the California Pacific Company, running thirty years from July 1, 1875, payment of which is guaranteed by the Central Pacific Railroad Company. This action of the committee requires the approval of the bondholders before it can be acted on. Although the bondholders had gained a decision in their favor in the State Court of California, their counsel were not satisfied to wait the decision of the case by the United States Circuit Court, and determined to accept the original offer in behalf of their clients; it is understood on the ground that the Extension bonds were made mortgages on a road which was never built, and it was doubtful if they constituted a lien upon any portion of the constructed road. The new bonds to be issued under the proposal will be the equivalent of the third-mortgage bonds. The dealings appear not to have been on the basis of so much for each bond, but with a syndicate for the whole loan and back interest."

Delaware, Peoria & Warsaw.

Mr. F. N. Finney, the Chief Engineer and Assistant Superintendent, has issued the following circular to employees, dated Oct. 1: "The season is approaching when variations in temperature and unsettled weather make the operations of a railway more hazardous than during the summer months. The danger from accidents is approaching. I therefore address you for the purpose of cautioning you against all neglect, and to invite you to renewed vigilance and watchfulness. We have had a summer of unusual freedom from accident, and we may go through the fall, winter and spring with the same immunity if every man will do his duty with fidelity. Take no risks. Be sure you are on the safe side. Let every engineer look out for the safety of his engine and train. Let every conductor watch carefully that no duty devolving upon him is in any way neg-

lected. Let every station agent and operator be vigilant. Let every section foreman and laborer watch his track, switches and frogs. And if every man, no matter what his position, will take a personal interest in his own work, be courteous, prompt and faithful, we shall see the business of the road done in a manner creditable to ourselves and with satisfaction to our patrons. I feel sure that every one of you will join me heartily in doing this good work."

Keithsburg & Eastern.

At the annual meeting recently the stockholders voted to approve an agreement of consolidation with the Forty-first Parallel Railroad Company of Indiana, and another company of the same name in Iowa.

Quachita Valley.

A movement is on foot to complete this road, which is partly graded from the St. Louis, Iron Mountain & Southern at Arkadelphia, Ark., south to Camden, 40 miles. It is also proposed to extend it from Camden south by east through Eldorado to Farmersville in Union Parish, La., a further distance of 71 miles. The Farmersville people are willing to build the road from their town to the Arkansas line.

Danville & New River.

The people of Henry County, Va., have voted to subscribe \$100,000 to this projected road from Danville, Va., west to Taylorsville. Private subscriptions to the amount of \$85,000 have also been secured.

Richmond, Fredericksburg & Potomac.

The buildings for the new repair shops at the Fair Grounds in Richmond, Va., have been completed, and the tools and machinery were to be removed there this week from the old shops on Broad street.

Petersburg.

The Virginia Circuit Court has granted an injunction restraining the city of Petersburg from selling 3,500 shares of stock in the Petersburg railroad owned by Reuben Ragland, and held by the city as collateral security for the amount of a claim against Ragland.

The injunction was granted at the instance of Reuben Ragland, who claims that the Seaboard & Roanoke Railroad Company and the authorities of the city of Petersburg have conspired to depreciate the stock, they knowing that they are likely to be bidders for the same if sold in bulk.

Springfield & New London.

The long cut near the junction with the Springfield, Athol & Northeastern road has been completed, a switch put in to connect with that road, and the work of tracklaying will be begun at once. The rails have been ordered from the Albany & Rensselaer Iron & Steel Company at Troy, N. Y.

Davenport & St. Paul.

Surveys are being made for the proposed new entrance into the city of Davenport, Ia., which is also to be used by the Chicago, Clinton & Western road.

Burlington & Northwestern.

A committee from this company has been conferring with Receiver Winslow of the Burlington, Cedar Rapids & Minnesota with reference to securing for the new road the use of the Cedar Rapids track from Burlington to Mediapolis. Mr. Winslow has refused the request for the use of the track and the question is to be referred to the representatives of the bondholders.

Pacific, of Missouri.

Rumors are current as to the embarrassment of this company and the lessee of its lines, the Atlantic & Pacific Company. This embarrassment is said to arise from difficulty in carrying the floating debt. It is also rumored that the quarterly dividend on Missouri Pacific stock will not be paid, although the lessee has given the usual notice of payment. Monday, the stock fell from 36 to 28.

In the suit brought by the St. Louis, Lawrence & Denver bondholders to enforce the payment by this company of coupons falling due after the lease of that road by the Missouri Pacific had been canceled, the United States Circuit Court has decided against the bondholders, and holds that this company is not liable.

Vermont Central.

The taking of testimony on the accounts of the trustees is completed, and an adjournment has been had until Oct. 19, when arguments will be heard from counsel for the trustees, the bondholders and the Vermont & Canada Company. The evidence put in by the trustees in rebuttal was voluminous and was mainly in a documentary form. Mr. W. C. Smith defended the contracts made with the St. Albans Foundry Company, claiming that no more than the regular market price at Troy, with freight to St. Albans added, had been paid by the trust. Mr. J. Gregory Smith also made a long argument in defense of the management, claiming that the trust should be treated as a corporation, and also that the various leases and extensions had been made with the consent of the parties in interest.

Peoria & Mississippi.

It is proposed to build a narrow-gauge railroad from Peoria, Ill., westward by way of Tivoli, Norris and Prairie City to the Mississippi River, a distance of about 90 miles. It is thought that nearly enough local subscriptions can be obtained to build the road.

Pacific Mail.

It is reported that this company has agreed to sell its line from Yokohama, Japan, to Shanghai, China, with four of its smaller steamers, for \$700,000. It appears to be certain that negotiations have been in progress.

Railroad Building in California.

The San Francisco Bulletin of Sept. 23 says: "If we except the operations of the Southern Pacific Railroad Company at Tehachape, San Fernando and San Geronimo, the railroad enterprises now under way in this State are not of very great magnitude. But there are a number of minor ones which are of considerable importance to those sections of the State which they intersect. The southern counties have been the chief scene of railroad operations of every description for some time past, the development of that part of California having been much slower than that of the northern and midland counties."

"In addition to the work being done on the main trunk between the Colorado Desert and Caliente, the Southern Pacific Railroad Company is extending the Anaheim Branch to the thriving settlement of Santa Ana, six miles beyond. The same company has recently completed a preliminary survey of the route from Santa Ana to San Diego, and commenced another survey from San Diego to San Bernardino; and the survey of the route from San Diego to Fort Yuma is also contemplated."

"Grading and tracklaying are being pushed vigorously ahead on the line of the Los Angeles & Independence Railroad, between Santa Monica and Los Angeles, and between Los Angeles and Cajon Pass. A depot site has been secured in Los Angeles, and the right of way through the public streets of the city obtained, so that there ought not to be any great delay in putting that part of the road to tide-water in running order. We learn from the San Luis Tribune that operations have been resumed on the San Luis & Santa Maria Valley Railroad from Avila to the former place, and will be completed by Jan. 1. A project is also on foot to continue the construction of the road from the Santa Maria Valley across the Sierra de San Rafael to Bakersfield, Kern County, a distance of 150 miles. If the project

ever matures it will give the upper Tulare Valley a short cut to tide-water.

"The people of Alameda and Santa Clara counties are moving in the matter of constructing a narrow-gauge railroad from Los Gatos to Alviso on the bay shore, and around the head of the bay to Dumbarton Point opposite Ravenswood. The cost of the road is estimated by its projectors at \$12,500 per mile."

"Ione Valley, in Amador County, contains considerable good agricultural land; but it has so far lacked any better transportation accommodation than ordinary teams can furnish. The inauguration of two railroad enterprises which contemplate connecting the valley and the mines around Sutter Creek and Jackson with the Central Pacific Railroad was hailed by the citizens of that county with considerable delight. One of these roads—the Galt & Ione—is an offshoot of the Central Pacific; the other—the Ione Valley—is under an independent corporation. Owing to the tardiness of the stockholders in paying its assessments, work on the latter has been temporarily suspended. The Central Pacific Company is taking advantage of the situation and pushing its road ahead vigorously."

"Throwing out branches to connect with the trunk roads, or the construction of short independent lines to tide-water, is really the principal feature in railroad building in California at present. Besides those already named, a railroad is being built from Fulton to Guerneville, in Sonoma County, a distance of fifteen miles; graders are at work on a branch railroad from Woodland, Yolo County, to Tehama, and Nevada is seeking a outlet to Colfax by means of a narrow-gauge railroad. The construction of a railroad from Chico to Susanville is a matter now under consideration. One of the most important enterprises the Oregon & California Railroad Company have in contemplation is the construction of that road to its ultimate destination, via Goose Lake Valley, at an early date. Within the past few weeks, some of the leading directors of the Central Pacific Railroad Company, who also control the Oregon & California line, made a tour of inspection of the route, in company with one of their engineers."

New London Northern.

This company proposes to build a branch from South Montague, Mass., by way of Montague Center to Turner's Falls. The distance is six miles, and the route an easy one.

Portland & Ogdensburg.

The town of Littleton, N. H., has begun suit to enjoin this company from building its road as at present located by way of Whitefield and Dalton. The charter directs that the road should pass through Littleton, unless that route should be found impracticable, in which case the location through Whitefield and Dalton could be adopted. The suit, of course, will depend upon whether the Littleton route is impracticable in the sense of the charter, that is, in respect to grades. A temporary injunction was granted to hold until after the hearing before the Circuit Court. A compromise, however, was afterwards agreed upon, the injunction was dissolved, and the work on the road will proceed.

Tennessee Railroad Taxation.

The State Board of Assessors has made the following valuations of railroad property in Tennessee under the law of 1875:

	Mileage in State.	Rate per mile.	Total valuation.
Mobile & Ohio.....	117	\$6.00	\$702,000
St. Louis & Southeastern.....	48	6.00	288,000
Chn., Cumberland Gap & Charleston.....	39.3	10.00	393,000
N. O., St. Louis & Chicago.....	116.13	12.50	1,451,625
Mississippi & Tennessee.....	9.3	10.00	93,000
Paducah & Memphis.....	65	8.00	520,000
Louisville & Nashville, Main Stem.....	45.42	18.00	817,560
Louisville & Nashville, Nashville & Decatur Div.....	92.97	11.00	1,022,670
Louisville & Nashville, Memphis Line.....	212.5	15.00	3,187,500
Knoxville & Charleston.....	16	16.00	256,000
Knoxville & Ohio.....	40	12.00	480,000
Rogersville & Jefferson.....	16	5.00	80,000

As the counties are allowed to tax the roads at as high a valuation as the State, the assessments appear in most cases to be very high.

The companies that have accepted the law and agreed to pay the annual tax of 1 1/2 per cent. on gross earnings in lieu of all other taxes are the Nashville, Chattanooga & St. Louis, the Western & Atlantic, the East Tennessee, Virginia & Georgia, the Memphis & Charleston, the Winchester & Alabama, the McMinnville & Manchester, the Tennessee & Pacific and the Tennessee Coal & Railroad Company.

Toledo, Ann Arbor & Northern.

The bankrupt sale of the property of this company, which was postponed from Sept. 14, took place Sept. 27. The property, consisting of right of way and partly graded road-bed, was bought by Benjamin J. Crane, of Ann Arbor, Mich., for \$1,000. It is said that he represents parties who will go on and finish the road.

Dayton & Southeastern.

The road has been finally located from Dayton, O., to Salt Creek in Jackson County. The company intends to let the contracts for that section as soon as the engineering work is done.

New York, New Haven & Hartford.

The general freight office, which has been located in Hartford, Conn., is to be removed to New Haven early in October. The general offices are now all in New Haven or New York.

Elizabeth, Lexington & Big Sandy.

A meeting was held in Louisville, Ky., Sept. 28, at which were present committees of the City Council and of citizens of Louisville and committees from Richmond, Va., and Lexington, Ky., the object being to devise some way of completing this road to a connection with the Chesapeake & Ohio. It was resolved that Louisville ought to subscribe \$500,000 in aid of the completion of the road, from the present terminus at Mount Sterling to Huntington, provided Richmond will subscribe \$300,000, and that \$200,000 more is raised in Kentucky, these subscriptions to be made on condition that the present managers and stockholders will give the new subscribers the control of the road on satisfactory terms, and that the Legislature of Kentucky will make the necessary alterations in the charter of the company.

Illinois Central.

There is a controversy on hand with the Internal Revenue Department, which claims some \$69,000 back taxes due from the company in the form of unpaid tax on earnings. The company claims that this amount is made up by including receipts from land sales in the earnings. The books are to be examined by expert accountants at the request of the company.

Delaware & Hudson Canal.

The new office building of this company in New York, which is of unusually solid construction, is thus described in the New York Times: "The new and magnificent structure to be known as the Coal and Iron Exchange, on the corner of New Church and Cortlandt streets, is almost completed, and will soon be ready for occupancy. It extends 143 feet on Cortlandt street and 105 on New Church, covering nearly six full lots, the majority of which were formerly the old Western Hotel property. The ground cost over \$300,000 and the building about \$1,250,000. The new exchange is five stories in height, with a Mansard roof and two quadrangular towers, one at either end of the Cortlandt street front. The first story, which is on a level with the street, is of fluted Nova Scotia stone. The superstructure is of brick, with heavy carved Nova Scotia stone trim-

ings. The main entrance is in the center of the Cortlandt street frontage, and consists of an imposing archway of Nova Scotia stone, cut in graceful designs, and a flight of wide stone steps extending from the street to the floor of the second story. Thence marble stairways, balustraded with iron of unique pattern, run up to the top floor. All the hall floors are of white tessellated marble, and the sides of the halls and stairways are wainscoted with gray, white and black marble, so inlaid as to produce a very neat and pleasing effect. The portion of the lowest story facing upon the New Church street side, 50½ by 74 feet, has been set apart for the purposes of an Exchange, where persons interested in coal or iron may meet daily to exchange views, obtain the latest trade information, and barter, as in the Produce Exchange. This room covers 1,868 square feet. Near it are two other large rooms to be used as a dining-room and kitchen by the Delaware & Hudson Canal Company, who own the building, and whose offices will take up the entire western half of the floor above. The remainder of the edifice has been laid out into suites of offices which are intended to be let to private parties connected with the two interests to which the structure is devoted. There are two elevators, extending from top to bottom of the building, on either side of the main staircase, and behind them is a large foul-air and smoke shaft. The heating and ventilating apparatus are of the most efficient kind. Several large condensing boilers have recently been placed in the cellar. Behind the elevators and air shaft there is a large court for the purpose of affording additional light and ventilation to the rear offices. The ceilings throughout are very high, the walls are hard finished, and the doors and wood-work generally are of ash, with panels veneered with polished ash root, an exceedingly beautiful wood. It is expected that the Exchange will be opened for business in a few weeks.

The Southern Railroad Agreement.

Trouble is likely to arise from the recent pooling agreement. It appears that while the agreement was in full force the South Carolina road, which was not in the pool, secured a good share of the business going from Atlanta to the sea-board, and this freight passed over the Georgia Railroad from Atlanta to Augusta. The Georgia road was in the pool, and will have a considerable surplus to pay into the joint treasury under the agreement. The Atlanta Herald says that a movement is on foot among the Georgia stockholders against this, and that General Toombs and Judge Collier will probably file a bill on behalf of the stockholders to restrain the Georgia Railroad Company from paying any portion of its freight earnings into the pool. In case any amount has been paid over they will seek to make President King personally responsible for such amount.

It is also stated that the East Tennessee, Virginia & Georgia and the Atlantic, Mississippi & Ohio companies, as well as the South Carolina, have always opposed the pooling principle. The Western & Atlantic also, it is said, did not approve of it.

Atchison, Topeka & Santa Fe.

The Boston Advertiser says: "The Atchison, Topeka & Santa Fe Railroad resumes interest on the land grant bonds Oct. 1, and also pays coupon No. 5 on \$976,000 consolidated second-mortgage bonds. These are not the bonds selling in the market at 86½, but are an earlier issue of the same class. The last issue amounts to \$2,074,000, into which 18 months of first-mortgage coupons were funded, and by agreement the first coupon on these does not mature until Oct. 1, 1876. With the exception of this difference of one year's interest, these bonds are precisely the same, and after October, 1876, will be identical."

Gulf, Western Texas & Pacific.

The recent storm and flood almost destroyed the Gulf terminus of this road, at Indianola, Tex. The wharf, engine house, depot, repair shops, turn-table and several cars were swept away and destroyed, causing a loss estimated at \$55,000. It will take some time to replace the buildings lost.

Old Colony.

A section of ten miles of the road from Boston out is to be supplied with Hall's electric signals, and worked on that system. The passenger-train cars are now nearly all fitted with the Miller platform.

Southern Minnesota.

Notice is given that the coupons due April 1 on the first mortgage 7 per cent. (pink) bonds, with interest thereon to date, and the coupons due Oct. 1 on the same bonds will be paid on presentation at the Third National Bank in New York.

Detroit River Tunnel.

The Detroit Free Press, in giving an account of some blasting operations in the bend of Detroit River at what is known as the "cross-over at the lime kilns," says:

"Within about a week after W. K. Muir's assumption of the management of the Canada Southern Railway a party of engineers was set at work at the 'cross-over' to take observations relative to the construction of a railway tunnel, and the result shows that the location is very advantageous for the successful prosecution of the proposed work. Soundings have been taken showing a river bed somewhat uneven, with a depth of water varying from ten to twenty-five feet. Observations have been made where each sounding was taken, showing that for the most part the bed of the river consists of limestone, while the measurements indicate that the tunnel proper will be but a trifle over half a mile in length, and, with its approaches, one mile and a half long. It is estimated that a double-track tunnel can be constructed at this point at an expense not quite half as great as the estimated cost of the abandoned project between this city and Windsor, while it is thought that the work can be completed in less than two years."

Montclair.

The first-mortgage bondholders, who bought this road at the recent foreclosure sale, took possession of the property Sept. 29, and the formal deed was executed a few days later. A temporary bridge is to be put up over the Passaic River to replace the one burned two months ago. A new iron bridge is to be built by the Watson Manufacturing Company of Paterson as soon as possible. Other improvements will be begun as soon as arrangements can be made.

The bondholders' committee has invited the town committees of the towns in New Jersey which issued bonds in aid of the road to a conference, the object being to see if some arrangement cannot be made for the recognition of the townships interest in the road. The towns which subscribed were Montclair, Kearny, Woodside and Pompton. The town of Woodside has since been annexed to the city of Newark, while Pompton has had trouble with the road and refused to pay interest, and is not included in the present invitation to a conference.

Notice is given that first-mortgage bondholders who did not join in the agreement to purchase the road can do so now, provided they deposit their bonds without delay. The new corporation formed by the bondholders has been fully organized.

West Wisconsin.

Dr. de Klerck writes from Amsterdam that at the London meeting of bondholders Sept. 15 a committee was appointed, but there not being much confidence in its effectiveness, the bonds fell from 38½ to 38. It was rumored that there would at all events be a delay in the absorption of the company by the Chicago & Northwestern, on account of difficulty in the way of the proposed new issue of stock. This, it is said, cannot be

made unless announcement is made three months before the stockholders' meeting of the directors' intention to ask permission to make such an issue.

A case is now on trial in the Monroe County (Wis.) Circuit Court which involves the right of this company to build the new line from Warren's Mills to Elroy. This extension was built three years ago to secure connection with the Chicago & Northwestern and at the same time the old track from Warren's Mills to Tomah was taken up, which gave great offense to some local interests. The defendant in the suit in question some months ago tore up the track through his property, claiming that the company had no legal authority to build the extension or to change its line. The company had him arrested on a criminal charge for obstructing the track and also began a civil suit for damages. The criminal charge is that on which he is now being tried.

Chicago, Milwaukee & St. Paul.

There is again talk of the extension of the Monroe Branch from Monroe, Wis., westward to Dubuque, Ia., a distance of about 55 miles. It is said that parties in Dubuque have offered considerable inducements to the company to make the extension.

Michigan & Ohio.

Rumors are current that the Michigan Central has agreed to iron this road from Grand Haven, Mich., to a junction with its Grand River Valley Division, a distance of 35 or 40 miles, and that the same company will then lease and work this section. Nothing definite is known as to the truth of these reports.

Sioux City & Pembina.

The managers of this company have resolved to resume work, which was suspended three years ago. Parties are to be put on to finish up the grading, and the President, Mr. Walker, has gone East to negotiate for iron enough to lay the track to Richland, Dakota.

Susanville & Reno.

Engineers have recently been engaged in making observations of the proposed line through the Lassen Pass and along Deer Creek. Thus far the explorations have been very satisfactory, and this line is thought to present many advantages over the Feather River route. The Deer Creek country is said to be very fertile, and there are also indications of mineral wealth. The road will open a large lumber district in Chico and Butte counties, California.

Santa Cruz & Felton.

This road is now completed from the town of Santa Cruz, Cal., north to Felton. It is of three-foot gauge and six miles long. From Felton a flume has been built about 15 miles up the San Lorenzo Valley to a large body of redwood timber, heretofore inaccessible. The company which owns the railroad has established large mills, the lumber from which is sent down the flume to Felton and thence over the railroad to the shipping port at Santa Cruz.

The Central Pacific at the Centennial.

The Central Pacific is setting a good example to other land grant companies, and indeed to companies without land grants which have an interest in the rapid settlement of the territory where their roads are, as appears by the following extract from the San Francisco Bulletin of Sept. 23: Monday a representative of the Bulletin was admitted to the rooms of the Central Pacific building on Townsend street, where the superb collections of Pacific coast specimens for exhibition at Philadelphia are being stored away and classified. The exhibition will be made under the immediate auspices of the company, although an urgent appeal has been received from the Smithsonian Institution, asking that the privilege of making the display be granted to that management. For the past eighteen months the Land Department of the corporation has been industriously seeking out and gathering together the finest mineral, cereal, ornithological and zoological collection ever secured on this coast. Besides this the exhibit will embrace—in fact, already embraces—some of the largest collections of marine, land and fresh water shells ever known. Moreover, specimens of all the coals of the Pacific region have been secured. They represent fully one hundred different grades, from the finest Shasta to the commonest slate-mixed stone. The timber of the coast is represented by specimens, green, polished and petrified. There are also cuts from old monoliths of the forest, whereon approximate estimates of the rain-fall for two centuries past are made in the rings which indicate the yearly growth. To convince the incredulous ones of the accuracy of estimating the moisture of past decades and centuries by this method, a butt cut is shown which was taken from a tree planted seventeen years ago, and the records of rain-fall thereon engraved compared with the annual registers preserved on paper by official meteorological societies. It is an easy task to satisfy the observer that the variation in the estimates is hardly perceptible, and on this basis the amount of moisture in the past is approximated.

"It would require the space of an ordinary volume to mention the full list of specimens embraced in this collection, for they represent birds of every plumage, animals of every species, together with curious alkaline formations, pisolites, marble polished and rough, sandstone pumice, honey-combed lava light enough to float, fossilized fish, borings from artesian wells, curious relics of armor breastplates, fossil reptiles, entomological specimens, etc. In the line of cereals the tallest corn stalks and the heaviest sheaves of barley and wheat, together with threshed grain in properly labeled bottles, are fitly represented. The mineral resources of the coast will be indexed by samples of copper and silver ore, gold quartz, nuggets, etc. The labor of gathering together the necessary specimens is not yet completed. From the early ripening grain of 1876 additional collections will be secured, and as new discoveries are made and curious relics found, efforts will be put forward to procure whatever there may be in them worthy of holding a place in the cabinet of the company. The collection as it now stands has been classified with the utmost care. The cabinet for the safe keeping of the rarest and most valuable shells is a model of beauty in design, and withal, convenient in its construction."

ANNUAL REPORTS.

Kansas City, St. Joseph & Council Bluffs.

This company owns a line from Kansas City, Mo., following the general course of the Missouri River, northward to Council Bluffs, Ia., 199.3 miles, with a branch from Amazonia, Mo., north to the Iowa line at Hopkins, 50.2 miles, making 249.5 miles. It also works the St. Joseph & Topeka road, from St. Joseph, Mo., to Atchison, Kan., 25 miles.

The property was represented as follows at the close of the fiscal year, Dec. 31, 1874:

Capital stock (\$11,180 per mile).....	\$2,789,413
Bonded debt (\$27,691 per mile).....	6,909,000
Bills payable (\$9,716 per mile).....	927,140
Total (\$42,587 per mile).....	\$10,625,553

The principal of \$539,500 St. Joseph & Council Bluffs 8 per cent. bonds became due June 1, 1874, and \$305,000 three-year notes also became due between Oct. 1, 1874, and June 1, 1875. At the date of the report these amounts were still unpaid. The bills payable include \$305,000 three-year 10 per cent. notes, \$577,140 ten-year coupon notes, issued for funded coupons, and \$45,000 real-estate notes given for depot grounds in St. Joseph.

The company is in default on its interest, and has made a proposal to the bondholders to fund their coupons, concerning which the report says: "It is well known, however, to the bondholders of this company that a plan was submitted to them, under date of March 25, 1874, looking not only to the relief of the property from its embarrassment, but for placing its securities in the future in a position of assured strength."

"Under this plan the holders of the first-mortgage bonds were to surrender and convert their coupons for two years, amounting to \$640,200, into ten-year income notes of the company, bearing interest at 7 per cent. per annum, payment of the same being secured by the coupons held in trust; provided—

"The holders of the second and consolidated mortgage bonds, together with the holders of the three-year notes of the company, would exchange their securities for preferred stock, entitled to a cumulative dividend of 8 per cent. per annum from Aug. 1, 1873, before any dividend should be declared on the common stock. Up to this date this plan has been agreed to, practically, by all of the first-mortgage bondholders and by the holders of more than three-quarters of the lower securities. A sufficient number, however, of these lower securities remain outstanding to defeat the plan."

The holders are urged to fund on the grounds that the earnings of the road will probably pay a dividend on the preferred stock in 1876, and that if the plan is not carried out, the first-mortgage bondholders will insist on their rights. The overdue securities also must be provided for.

The equipment consists of 30 engines, 34 passenger-train cars, 262 freight-train cars and 84 road and service cars.

The work done during the year was as follows:	
Train mileage.....	740,054
Passengers carried.....	221,921
Passenger freight.....	12,541,738
Tons freight carried.....	364,371
Tonnage mileage.....	34,252,012

The average receipts were 4.213 cents per passenger per mile, and 2.385 cents per ton per mile.

The earnings of the road for the year were as follows:	
From freight.....	\$817,086.70
Passengers.....	528,324.92
Mails, express and miscellaneous.....	90,662.34

Total (\$5,231.60 per mile).....	\$1,436,073.96
Working expenses (58.24 per cent.).....	836,346.13
Taxes.....	60,000.00
Rentals.....	40,148.36
Expenses of Boston office.....	4,669.43
Total expenses (55.54 per cent.).....	\$941,164.94

Net earnings (\$1,802.94 per mile).....	\$494,908.72
Charged to construction and equipment accounts during the year.....	137,921.00
Balance.....	\$357,387.72

No comparison can be made with the previous year, no report or statement for that year having been published. The balance of \$357,387.72 is 4.56 per cent. on the funded and floating debt, and is 56.1 per cent. of the annual interest account.

Missouri River, Fort Scott & Gulf.

This company owns and works a road from Kansas City, Mo., southward to Baxter Springs, Kan., 161 miles.

The debt of the company at the close of the last fiscal year, Dec. 31, 1874, was as follows:

First mortgage bonds, 10 per cent.....	\$5,000,000
Second ".....	1,947,000
Unpaid first mortgage coupons.....	500,000
Unpaid second ".....	97,500
Bills payable.....	94,319
Total (\$47,446 per mile).....	\$7,638,819

The interest on the bonds has been in default a year. The report says: "Pursuant to our circular of Dec. 15, 1874, all the net revenues of the road from Jan. 1, 1875, are to be placed in the hands of the Trustees of the first mortgage bondholders, and a dividend will be paid to said bondholders on the first day of July next, which from present indications may reasonably be estimated as a half coupon, or 2½ per cent. on the first mortgage bonded indebtedness of this road."

The Land Department reports sales during the year of 880 acres free land for \$3,609.88, of 17,736.67 acres neutral lands for \$162,399.06, and of 109 town lots for \$5,829.52. The total sales up to the close of the year, were 420,735.64 acres for \$2,385,211.08, and 699 town lots for \$64,781.35. There remain unsold 322,199.45 acres. The cash receipts were \$120,870.34; the expenses, \$20,131.66, besides \$43,691.18 paid for taxes.

The equipment of the road consists of 21 engines, 12 passenger, 5 baggage and 2 mail cars; 243 combination, 401 coal, 14 flat and 8 caboose cars, 1 pay car.

During the year 3,457 freight and 1,510 passenger trains passed over the road, besides 310 trains of the Leavenworth, Lawrence & Galveston road. The mileage of passenger trains was 198,123; freight, 235,048; total, 433,170. The mileage of passenger train cars was 664,109; of freight cars loaded, 2,309,874; empty, 1,388,572; total, 3,548,446. Of this 1,505,998 miles were run by foreign cars. The empty car mileage was 37.72 per cent. of the whole. The tonnage mileage for the year was 20,656,536, a decrease of 0.41 per cent. from 1873.

Earnings:	1874.	1873.	Inc. or Dec.	P. C.
From passengers.....	\$205,538 37	\$204,095 53	Inc...	1,442 84 0.7
Freight.....	447,490 22	433,637 63	Inc...	13,852 59 3.1
Mail and express.....	27,889 60	28,390 20	Dec...	500 60 1.8
Miscellaneous.....	12,481 52	41,858 97	Dec...	29,377 45 70.1
Total.....	\$693,399 71	\$707,982 33	Dec...	\$14,582 62 2.1
Working expenses.....	348,106 22	416,203 86	Dec...	68,097 64 19.4
Construction.....	7,636 01	23,464 44	Dec...	15,828 43 20.7
Miscellaneous.....	4,256 53	5,354 96	Dec...	1,118 43 26.4
Taxes and insur'ce.....	49,499 81	47,634 34	Inc...	1,865 47 3.9
Totals.....	\$409,478 87	\$492,657 60	Inc...	\$83,179 03 18.9

Net earnings.....	\$283,921 14	\$215,324 73	Inc...	\$68,596 41 31.9
Earnings per mile.....	4,361 00	4,452 72	Dec...	91 72 2.1
Per cent. of expenses.....	50.20	58.70	Dec...	8.50 14.6
Expenses, taxes, etc.....	59.05	69.50	Dec...	10.54 15.1

The income account was as follows:

Net receipts, less Land Department expenses.....	\$262,588 74
Land Department.....	26,641 54
Coupons of county bonds.....	10,482 50
Total.....	\$301,712 78

Payment of money borrowed to pay coupons.....	\$185,500 00
Interest.....	17,345 85
Traffic guarantee, Kansas City & Santa Fe.....	13,905 00
Purchase of coal cars.....	44,000 00
Hire ".....	17,160 00
Old coupons paid.....	450 00
Balance.....	\$23,357 93

In March the trains of the Leavenworth, Lawrence & Galveston ceased to use the road from Olathe to Kansas City, and its cars have since been drawn to and from Kansas City by the engines of this road. In June an agreement was made with the Missouri, Kansas & Texas for pooling Fort Scott business, which has worked well. An arrangement was also made for a transfer to this road at Fort Scott of all Kansas City business passing over the Missouri, Kansas & Texas. The results have thus far been satisfactory.